

Japan Plant

Clematis patens Morr. & Don

" *japonica* Thunb

Thalictrum Thunbergii DC

Ranunculus sceleratus L

" *ternatus* Thunb

" *repens* L var

" " "

" " "

" *propinqua* Meyer

Cattha pubula L

Agrimonia flabellata A. & R

Actaea spicata L

Paeonia officinalis L

Glaucidium palmatum A. & R

Maquolia hypoleuca A. & R

Sphaerostema japonicum Gray

Akebia lobata Don

Stephania hermaphrodita

Berberis vulgaris L

" *Thunbergii* DC

Nandina domestica

Leandrophyllem thalictroides Michx

Diphylleia cymosa DC

Nuphar japonica DC

Chelidonium majus L

Scilla spectabilis DC

Corydalis incisa Pers

" *pallida* "

Leorydalis racemosa Pers
Arabis hirsuta Scop
 " *japonica* A. Gray
 " *lyrata* L
Cardamine imprata L
 " *parviflora* L
Draba nemorosa L
Nasturtium Indianum?
Capsella Bursa pastoris
Cardamine macrophylla
Cardamine hirsuta L
 " " " var
Isatis tinctoria L
Viola Selkirkii Pursh?
 " *Pachii* DC
 " *sylvatica* Fries var *imbricata* macroantha
 " " " var " *macroantha*
 " *verecunda* Gray
 " *lucida* " "
Drosera rotundifolia L
Dianthus japonicus Thunb
Honkenya heptoides var *oblongifolia*
Dianthus superbus L
Moroghia latiflora Fenzl
Lagotis maxima A. Gray
Arenaria serpyllifolia L
Stellaria alginosa Murr.
Malacothrum aquaticum Fries
Cerastium vulgatum L. var
 " *viscosum* L.

Actinidia platyphylla A. Gray
Eurya japonica Thunb. var *Chrysantha*
Camellia japonica L
Alnus annulata " "
Melicope arbutifolia " *Alnus japonica* Thunb
Stachys precox S. & Z.
Pittosporum Tobira Ait
Gratiola corniculata L
Geranium erianthum Fisch
Pierasma japonica A. Gray
Hemithysa piperitum DC
Erodia ramiflora A. Gray
Skimmia japonica Thunb
Coraria japonica A. Gray
Rhamnus toxicodendron L
Vitis Labrusca L
Rhamnus cathartica L
Ilex crenata Thunb
 " *integrifolia* "
Euonymus japonicus Thunb
 " *alatus* Blume
 " *hartwegianus* Wall
 " *latifolius* Scop.
Belaschne articulata Thunb
Staphylea trifolia DC
Viscaria staphyleoides S. & Z
Asculus turbinata Blume
Acer pictum Thunb
Pthygia japonica Horne
Thermopsis fabacea DC

Astragalus loides Pall
Orobanchaceae L.
Lathyrus palustris L
" *maritimus* Bigel.
Vicia japonica A. Gray
" *tetrasperma* Lessel
Milletia japonica
Tris dania sinensis, S. & Z
Loasalpinus. Sepiana Roth
Prunus Munne S. & Z

—
" *pseudo-cerasus* Lindl
" *virginiana*? L
" *betulifolia* Pall
Spiraea *palmata* Thunb
" *aruncifolia* L
Smilacina officinalis L.
" *lanceolata* Fisch

— " var
Agromonia Eupatoria L
Genus strictum Ait
Potentilla palustris Desf
" *anserina* L
" *fragarioides* L
" *fragiformis* Willd
" *repens* L
" var *hypoleuca*
Fraxinus Indica Andr
Rubus Chamaemorus L
" *purpureus* L
" *incisus* Thunb
" *palmatus* "

Rubus Wrightii A. Gray
Rosa rugosa Thunb
 " *acicularis*, Lindl
 " *sempervirens*, Linn.
 " *multiflora* Thunb
Vriarobotrya japonica Lindl
Rhamnaphis japonica Sieb
Photinia villosa Dc
Pyrus spectabilis Ait
 " *communis*, L
 " *uscularis*, Dougl
Leptodermis japonica Pers
Shepherdia floribunda Sieb
Saxifraga sarmentosa L
Rodgersia podophylla A. Gray
Chrysosplenium Kamtschaticum Schlecht
 " *ovalifolium* M. Bieb
Hydrangea paniculata Sieb
 Hortensia Dc
 " " *var. acuminata*
 " *cordifolia* Sieb
Dioscorea scabra Thunb
 " *ornata* Sieb
Sedum hybridum L
Ribes agrum L
 " *laxiflorum* Pursh
Bupleurum multifidum Dc
Angelica japonica A. Gray
Oenanthe laeta L
Aeracium lanatum Mich

Anthriscus sylvestris L
Aspidochloa longistylis Dc
Chimaphila noronensis DC & Planch
Aralia quinquefolia " "
Hatsia japonica " "
Parasponia spinosa Linn f.
Hedera helix L
Paratropis cantoniensis A. D. C.
Helwingia muscicola Witt
Aucuba japonica Thunb
Cornus canadensis L
" *suecica* L
Abelia serrata D. D.
Diervilla Miodendropiana A. Gray
" *japonica* Dc
" *floribunda* D. D. C.
Lonicera japonica Thunb
" *Morrowi* Gray
Viburnum Opulus L
" *plicatum* Thunb
" *obtusatum* "
" " " var *undulatum* "
" *erosum* "
" *odoratissimum* Ker?
Sambucus racemosa L
Asperula odorata L
Gatium verum L var
" *triflorum* Michx
" *hutchinsii* A. Gray
" " var *setuliflorum*

Gatium Aparia L var *Vaillantii*
Oleander paniculata L
Arisea foetida Comm
Samanea indica Gort.
Pedra fatida L
Valeriana dioica L
Heteropappus hispidus Less
Eugenia Thunbergii ^{Gray} var. *glabrata*
Solidago Virganea L. var *lewisii*
Coryza japonica Less
Pyrithum sinense Sabine
Lycium humile Dc
Embelia sonchifolia Dc
Leguminaria Kaempferi D. D. C.
Euphorbia dentata A. L.
Caecilia hirsuta
Senecio palmatus Hall
" *pseudo-Arnea* Less
Cirsium pectinellum A. Gray
" *Kamshaticum* Ledeb
" *japonicum* ~~Dc~~
Danthonia parviflora A. Gray
Picris hieracoides L
Paraxanthus dens-leonis Desf.
Ilex stolonifera A. Gray
" *albipetala* "
" *Thunbergii* var *A. Gray*
" *debilis* A. Gray
" *repens* " "
" *ramosissima* A. Gray

Younigia integra A. Gray
 " *Japonica* D. & B.
Sonchus *Asherii* Vill.
Campanula punctata Lam.
Adenophora verticillata Fisch.
Vaccinium macrocarpum Ait.
 " *Vin. Idag.* L.
 " ~~*Smallii*~~ *Smallii* A. Gray
 " *praetense* Kunth
Cruciatum nigrum L.
Leucothoe chloranth A. Gray
Andromeda elliptica D. & B.
Menziesia ferruginea Smith.
Ledum palustre L.
Aranea serpyllifolia Ging.
 " *Japonica* A. Gray
 " *Lidica* L.
 " *ledifolia* Hook.
Rhododendron brachycarpum Don.
Pyrola rotundifolia L.
 " *media* L.
 " *minor* L.
Monarda uniflora A. Gray.
Limpisia Japonica L.
Styrax Japonica D. & B.
Diospyros Kewii L.
Ardisia Japonica Blume.
Myrsine nervifolia D. & B.
Primula coralloriza L.
 " *Japonica* Gray.
Lysimachia clethroides Duby.
 " *rubicundus* D. & B.
 " *Japonica* Hook.
Kanabegia thysiflora Reich.

Plantago media L
Utricularia intermedia Hayne
Puellia japonica Thunb
Paulownia imperialis S. & Z
Linaria vulgaris Mill
Serophytum alata Gray
Mussa rugosa Lour

" var. *lychnis*
Ternstroemia Thunbergii A. Gr.
Pedicularis resupinata L
Calliandra Japonica Thunb? S. & Z.
" *japonica*
" *mollis* S. & Z
Lyngbya ciliata Brongn
" *decumbens* Thunb
" *pygmaea* A. Gr.
Leptanthus gracilis Benth
Thymus serpyllifolius L
Veronica Gmelini Benth
Dioscorea Rumphiana L
Bomarea vulgaris L
Scutellaria Indica L
" *Japonica* Mor. & Don
Stachys palustris L
Lamium pulchellum Boyle
Lithospermum officinale L
Mertensia maritima Don
Eristichium Gmelini A. Gray
Helioscopia japonica " "
Physalis Alkekengi L

Gentiana Thunbergia Griseb.
Meryanthes bifoliata L.
Panicum Thunbergii A. Gray
Vincetoxicum japonicum Morr. & Don
Ligustrum japonicum Thunb.

" *Hota* Sieb.

Immunis Sieboldiana Blume
Phytolacca Tompffera A. Gray
Rumex acetosa L.
Polygonum perfoliatum L.
Fagopyrum esculentum Moench
Euphorbia Pseud-Mesembryemum A. Gray
Eleocharis macrophylla Thunb.

" *longipes* A. Gray

" *umbellata* Thunb.

Thesium decurrens Blume
Scrophularia officinarum Benth.
Peucedanum sericeum S. & Z.
Lissocarpum glaucum Sieb.
Houttuynia cordata Thunb.
Chloranthus serratus Roen. & Schultze

" *quadrifolius* A. Gray

Callitriche verna L.

Paetysandra terminatis S. & Z.

Gonghia villosa Wright = *Euphorbia villosa* Roxburghii Ball

Euphorbia hirsuta L.

" *Guillelmi* A. Gray

Laportea bulbifera S. & Z.

Decrepia edulis Wedd.

Celtis sinensis Pers.

Morus alba L.
Quercus erecta Thunb.

" *Bauchmann*

" ?

Stemmadia sorbifolia S. & Z.

Quercus cuspidata Thunb.

" *phyllaroides* A. Gray

" *glandulifera* Blume

" *dentata* Thunb.

" *grossi-dentata* Blume

" *urticefolia* "

" *serrata* Thunb.

Castanea japonica Blume

Fagus sylvatica L.

Alnus ~~indica~~ formosa S. & Z.

" *viridis* DC.

" *japonica* S. & Z.

Salix Sieboldiana Blume

Picea massoniana Lamb.

" *densata* S. & Z.

Cryptomeria japonica Don.

Chamaecyparis pisifera S. & Z.

Juniperus rigida S. & Z.

" *taxifolia* S. & Z.

" *chinensis* L.

" ? L.

Leichtlinia drupacea S. & Z.

Arisaema Thunbergii Bl.

" *latifolium* "

Arisaema serratum Schott
 " *Japonicum* Bl.
Actiodraco *Japonicum* Gray
Potamogeton natans L.
Ziparus liliifolia Rich.
Arthusa Japonica A. Gray
Calanthe discolor Lindl.
Orchis latifolia Linn.
Platanthera bipuloides Lindl.
Habenaria japonica A. Gray
Pogonia ophioglossoides Nutt.
Glyphotrichum ensifolia Rich.
 " *Japonica* Gray.
Oreochloa lanceifolia "
Burmastha nutans "
Cymopodia Japonica Thunb.
Alpinia galanga Willd?
Iris setosa Pallas
 " *laevigata* Fisch.
 " *orientalis* Thunb?
 " *gracilipes* A. Gray
Pardanthus deakomus Ledeb.
Amilax China L.
 " " " *var. glaucescens*
 " *densistata* A. Gray
Paris hexaphylla Cham.
 " *tetraphylla* A. Gray
Trillium erectum L. *var. japonicum*
Asparagus lucidas Lindl.
 " *Wrightii* A. Gray
 " *Gaudichaudianus* Kunth
Polygonatum vulgare Desf.

- Polygonatum giganteum* Desf
 " *multiflorum* All
 " *falcatum* A. Gray
Convallaria majalis L
Smilacina bipeta Desf. var *Kentschakowii*
 " *Jahronica* Gray
Clintonia Odensis Trautv. & Meyer
Disporum smilacinum A. Gray
 " *sessile* Don
Staphylea amplifolia D.
 " *rosea* Mx
Litsea bulbifera L var *Thunbergiana*
Gnollana Kantschakowensis Torr. (Lit? nudicolony in ms)
Hemerocallis fulva L
Funkia Sieboldiana Hook
Allium Thunbergii Don
 " *schantzasum* L
 " *victoriale* L
Pluzea Japonica Reich
Veratrum nigrum L
Heloniopsis lanceiflora A. Gray
Juncus effusus L.
Luzula pilosa Willd
 " *campestris* L
Commelina polygama Roth
Cleochasis pilenta A. Gray
Sempus laevis L
Brachyotum gracile Benth
~~*Beckmannia encasformis* Hort~~
Leucy pecta Benth

Leucy micans Boott
 " *lanceolatum* "
 " *papulosa* "
 " *villosa* "
 " *transversa* "
 " *pumila* Thunb.
 " *anomala* Boott
 " *stipata* Muhl.
 " *albata* Boott
 " *muricata* L
 " *stellulata* Good
 " *umbata* L
 " *nana* Boott
 " *pauciflora* Boott
 " *dispalata* "
 " *japonica* Thunb
 " *gandichaudiana* Kunth
 " *longistomata* C.A. Meyer
 " *Wakuenensis* — —
 " *pellutipes* L
 " *vesicaria* L
 " *confertiflora* Boott
 " *filiformis* L
 " *polysticha* Wallroth
 " *proserp* Jaeg
 " *rostrata* Mich
 " *breviculmis* R.Br
 " *pusiformis* Boott
 " *cornica* "
 " *pusiformis* " var
 " *negens* "

Beckmannia ericiformis Host
Phalaris arundinacea L
Stenochloa borealis Kunth Schults
Melinis effusum L
Sporobolus elongatus R. Br
Agrostis cornucopiae Thunb
Fisetum flavescens R. & B. G. var
Poa pratensis L
 " *nemorata* L
 " *serotina* Ehrh
 " *sphondyliodes* Trin
 " *acutellus* Steud
Glyceria Cuspidata Trin
Melica nitida L
Festuca nitida L
 " *pauciflora* Thunb
Bromus japonicus Thunb
Vitium caninum Schreb
 " *semicostatum* Nees
Lysichiton purpureus Willd
Imperata arundinacea L. var
Ehrharta caudata Munro
Blechnum spicant Roth
Drymoglossum subcordatum Fied
Adiantum pedatum L
Brachium lucidum Spreng
Pteris cretica L
 " *dispar* Kunze
Athyrium fontanum Roth
 " *cryptopteroides* Duran

Tenu lo
 A. Gray
 D. G. Eaton
 Kun
 Paris
 Wpsal

- Athyrium*
Gymnogramme serrulata Blume
Grammitis totta Presl
Pluchospora germanica Willd
Drynaria hastata Fee
 " *ensata* Eaton
Polypodium vulgare L
Pleopeltis nuda Hook
Polystichum?
 " *polyblepharum* Komse
 " *superum* Komse
Nephrodium sphenolobos Desv
Lactuca spinulosa var. *delutata*
 " *setosa*
 " *Filiomas* Presl
 " *erythrosora* Eaton
 " *lacera* Eaton
 " " *sim. nov. nec num. nec lit.*
Savattia strigosa Desv
 " *villosa* Wall
 " *schneuzii* Desv
Osmunda japonica Thunb
 " *cinnamomea* L
Ophio glossum
Gymnophyllum
Adiantum monochlamys Eaton
Woodia polystichoides Eaton
Equisetum limosum L
Selaginella involvens Spreng
Lycopodium selago L
 " *lucidulum* Mx
 " *serratum* Thunb

Blechnum boreale Sz.
Drynoglossum carmonum ^{var. minus} Hook.
Adiantum monochlamys Baton
Adiantum pedatum Linn.
Orychium japonicum Kunze
Pteris cretica Linn.
Pteris dispar Kunze.
Asplenium elongatum Hook.
Asplenium Filix-foemina R.Br.
Gymnogramma javanica Blume
Gymnogramma totta Schlecht.
Plurithiopteris Orientalis Hook.
Polypodium vulgare Linn.
Polypodium hastatum Thunb.
Polypodium ensatum Sz.
Polypodium loriforme Hook.
Aspidium lepidocaulon Hook.
Aspidium tripteris Kunze
Aspidium aculeatum var.
Aspidium sphenoides Sz.
Aspidium dilatatum Sz.
Aspidium varium Sz.
(*Aspidium cristatum* var)?
Aspidium Filix-mas Sz.
Aspidium erythrosorum Baton
Aspidium lucerum Sz.
Aspidium sp?
Davallia strigosa Sz.
Davallia villosa Wallich

Davallia tenuifolia Sz.
Woodsia polystichoides Baton
Agnesophyllum Dryopteris K.T.B.
Cermandia japonica Thunb.
Cermandia cinnamomea Linn.
Ophryoglossum vulgatum Linn.

Ranunculaceae.

(Clematis patens) ^{Morr. &} DeCaisne, in Bull.
Acad. Brux., 3, p. 173. C. caerulea, Link.
Bot. Reg. 7, 1955. Hakodadi; valleys

and hill-sides, climbing over trees, J. Small.

A showy, Atragoid species, of which only two incomplete specimens were gathered. I have received it from the Royal Herbarium at Leyden under the name of "C. Kasaguruma, Sieb. & De-Vriese", which apparently remains unpublished. The sepals ^{are} about 2 inches long in the present specimens: they are narrower and more tapering to both ends than those of C. florida, and were noted by the collector as "purple". — I am not able to ~~identify~~ by the characters to identify either C. fusca, Turcz., or C. kamtschatica, Bong. (both from Kamtschatka or the Kuril Islands), with ~~Jap~~ known Japanese species.

Clematis (*Cheiropsis*) *Japonica* (Thunb. Fl. Jap. p. 140) ^{pilosula} ~~trifoliolata~~; foliolis membranaceis breviter petiolulatis ovatis seu oblongo-ovatis basi acutis a medio ad apicem aequaliter serratis acuminate; pedunculo ~~petiol~~ elongato petiolum gracilem adaequante supra medium bibracteolato, bracteolis oblongis parvis basi cuneatis; ~~petalis~~ sepalis 4 oblongis obtusis subseectis: glabris marginibus tomentulosis; filamentis ligulatis superne tantum pilosis; ovario antheris oblongo-linearibus; ovario stylisque villosissimis. — Simoda: in valleys. Fl. purple.

~~This is~~ The same as the specimens gathered by Williams and Morrow, but with fully developed flowers. It is doubtless Thunberg's plant, and probably Zuccarini's, although ^{he does not mention the bracts, and} the filaments ^{are} only sparsely ^{towards the summit} hirsute ^{above}, especially on their inner face, and wholly glabrous below. The sepals are scarcely

an inch long, "purple", blunt, and
thicker than in other species of the
section Cheiropsis, but not ~~more~~ ^{as thick}
~~as~~ ^{than} those of *C. cylindrica*. Pe-
duncle 3 or 4 inches long, ^{small} thick involu-
cre an inch below the expanded
flower. The ~~nearest~~ ^{nearest} relatives of this
~~and~~ well-marked species and of *C. Willi-*
amsii, Gray, are Himalayan species; but
they do not very closely resemble any
others.

Thalictrum Thunbergii, DC. Syst.
1, p. 183, PL. rar. 1, p. 155, ^{Delap. Ic. Sel. 12.} *flavum*. Thunb.
Hawaii, W. coast of Oero, nearly
lat. 43°, J. Small, "Fl. yellow."

The stem is ~~as~~ sulcate, just as
in *T. flavum*. The lowest leaves
were not collected; in a specimen from
the Leyden Herbarium they are con-
spicuously stipitate. Except for the
yellow flowers and fewer, and larger leaf-
lets, the plant might ~~fall into T. minus~~
be united with *T. Kamense*, Fries, which

Dr. Hooker reduces to *T. majus*, and
refers as a variety to *T. minus*.

Ranunculus sceleratus, Linn.
Simoda; in wet grounds.

The ordinary form of the species,
with elongated head of carpels; it was
also collected at the Lov Chor Islands

Ranunculus permatus, Thunb. Fl.
Jap. p. 241; Bucci, Jam. Nat. Fl. Jap. 1. c.
p. 71; Gray, in Perry, Japan Exped. 2. p. 306.
~~Simoda~~ Simoda; in wet grounds.

Also gathered at Lov Chor Island. A
pretty well marked species, not very un-
like some forms of *R. repens*, but
the achenia (well shown in these spe-
cimens) are proportionally larger,
more sharply margined, and terminated
with a larger and strongly hooked beak.

Ranunculus repens, Linn.; Torr & Gray.
Fl. 1. p. 21 + 658; Gray, in Perry. Jap.
Exp. 2. p. 306. Hakodadi, in damp shady
places, and on the sandy shores of the
Bay. Simoda.

The ^{numerous and fine} specimens from Hakodadi accord
with the larger American forms (var. maritimus) of what I take to be R. repens,
^{mostly} ~~although~~ larger than any European speci-
mens I have seen. Some are glabrous;
others hirsute. At Simoda Mr. Small
gathered one very rank specimen of the
smooth form and one very hairy one.
To the latter I am ^{now} disposed to refer the
incomplete specimens ^{gathered at the same place,} which ^{the Botany of} in Perry's
Expedition, I ^{doubtfully} referred to R. Japonicus.

Ranunculus prospinquus, C. A. Meyer in
Ledeb. Fl. Alt.; var. hirsutus, Trautv. &
C. A. Meyer, Fl. Ochot. p. 8. Hakodadi;
grows in rich alluvial soil.

A Siberian species, allied to R. acris.

8
Baltha palustris, Linn. Hakodadi; in marshes. Fl. yellow.

A saucicant stoloniferous form of the species, with rather small flowers and few fruiting carpels.

(*Isopyrum japonicum*, Diels & Rucc., or at least the plant so named in Perry's Expedition, is clearly *I. adoxoides*, W.)

Aquilegia flabellata, Rucc. Diels & Rucc. l.c.; Gray, l.c. Hakodadi.

A single specimen, probably, like those of Williams and Morrow, from a cultivated plant. The sepals not quite so large and the spurs less incurved.

Actaea spicata, Linn. Summits of mountains N. E. of Hakodadi. Also gathered, in fruit, by Mr. Small at Iliwanai, on the North West side of Gesso.

This is an addition to the Japan Flora, but one that was to have been expected. It had already been gathered in the Ochotsk region by

7
Middendorff. The pedicels are slender in the specimens from Uwanai (the color of the berries not recorded), and thickish in that from near Hakodadi.

Peonia officinalis, Linn., var. P. albiflora, Pall. Fl. Ross. t. 84. Hill-sides near Hakodadi. In fruit.

Glancidium palmatum, Sieb. & Zucc, Jam. Nat. Jap. l. c. p. 76, t. 1; Gray, l. c. Hakodadi, on very shady hill-sides. Flower lilac tinged with pink.

Of this curious plant we have now fine specimens with young fruit, and a flower just casting its perianth and stamens. Flower-bud and mature fruit are still desiderata. The stem, with a single radical leaf, rises from the apex of a thick, horizontal rhizoma, and attains nearly two

radical
feet in height; the petiole a foot
long, basal leaves 2 or 3; the
larger ones from 9 to 11 inches broad at
maturity. Flowers one or two, on
short terminal peduncles which are
obscured by the clasping round-ven-
iform uppermost leaf. No appearance
of any floral coverings outside of the
four, nearly orbicular, deciduous sepals
or petals, which therefore probably rep-
resent the calyx. Stamens, 8, as represen-
ted by Deccarini. But the anthers are
~~regularly~~ normally two-celled, and
open longitudinally down the outer edge
of each cell. The remarkable point brought
to light by these specimens in this collec-
tion is: that there are commonly two,
and sometimes three pistils, like ~~that~~
^{the one} represented by ~~Deccarini~~ in Deccarini's fig-
ures, only, ~~they are~~ when more than
one, they are united at the base.
In fruit the ovaries or lobes become
widely divergent; and those fullest grown
are ~~a~~ half an inch long, obliquely-

(the upper outer angle)
truncate at the ~~apex~~ summit and
tipped with the sessile stigma, rather
fleshy in texture, but evidently
follicular at maturity. Immature
seeds ~~numerous~~ ^{oval} in several ranks, flat
and thin, broadly winged except at the
hilum!

The number of pistils revealed by
our specimens excludes the idea of
a relationship with *Podophyllum* ^{and *Diphylleia*}, which
the foliage suggests, ~~and leave~~
Evidently ^{the genus} it must be referred to the
Ranunculaceae, ~~but not to the~~ - not
however to the tribe *Paonieae*, but to
the *Cimicifugeae*. Its nearest rela-
tive, in my view is the ~~the~~ Eastern
North American genus *Hydrastis*.
With this *Glaukidium* entirely ac-
cords in vegetation, foliage, and inflo-
rescence, as also in the simple and
caducous perianth and in the sta-
mens. The difference is in the pistils
and seeds. It is to be noted that the

woody bundles are more or less dis-
persed throughout the ~~stem~~ ^{stem} ^{nearly} as
in Podophyllum.

Magnoliaceae.

Magnolia hypoleuca, Sieb. & Zucc. Fam. Nat. Fl. Jap. p. 79. Nakodadi; on hill sides.

A small tree, with white ~~odors~~ flowers, exhaling the odor of Gaultheria.

Schizandra Japonica (sp. nov.).

Sphaerostema Japonicum: foliis omnino Schizandrae; floribus albis; staminibus 5 inaequaliter connatis. S. Japonica, Sieb. & Zucc. Fam. Nat. Fl. Jap. p. 80? (~~non tantum~~) absque char. Nakodadi, on hill sides.

As Deccarini enumerates a Japanese Sphaerostema, although without any indication of its characters, I take that specific name for our plant. If this should prove different it may take some other name, being still in

12
fact unpublished. It is most inter-
esting to notice, that in the ^{Asiatic} genus so
strictly analogous to our ~~A. American~~
Schizandra, the Japanese species makes
or close an approach to the North
American type, that, if the *Polyandrus*
species remained unknown it would cer-
tainly have been referred to it. Neverthe-
less ~~this~~ plant is clearly a *Sphero-*
stema, ~~with the~~ of the section *Fil-*
amentis basi monadelphis apice liberis,
with the stamens reduced to five. As
to the andracium, *Schizandra* is the
corresponding analogue of the other
section of ~~Schizandra~~ *Sphero**stema*,
with the ^{thickened} stamens reduced to five, and
with the anther-cells widely ~~dis-~~
separated. Our specimens of *Spha-*
rostema Japonicum have staminate
flowers only.

15

Lardizabaleae.

Akebia lobata, Decaisne, Mem.
Lard.; Sieb. & Zucc. Fl. Jap. 1. p. 143,
t. 77. Simoda: a single specimen,
in fruit, gathered by Mr. Small.

Menispermaceae.

Stephania hermadiifolia, Walp.
Rep. 1. p. 96; Hook. & Thun. Fl. Ind. 1. p.
196. (*Clypea hermadiifolia*, Night &
Arn.; Night. 2c. t. 939. *Menispermum*
Japonicum, Thunb. Fl. Jap. p. 193,
Island of Kiusiu, climbing on bushes.
A fruiting specimen with some
unfertilized female flowers. ~~Except in~~
The same as the Hong Kong plant,
also in fruit, and apparently the same
as a Japan specimen from the Leyden
herbarium. Lichsted *Oreocelus Japonicus*, DC.,
except that the leaves of the latter are
broader.

14
Berberidaceae.

Berberis vulgaris, Linn.; Thunb. Fl. Jap. p. 146. Nakodadi, on hill sides.

This is just the normal form of the species, with oblong ovaries and berries, ^{many-flowered racemes,} and even, setosely ciliate-toothed leaves.

Berberis Thunbergii, Dc. Syst. 2, p. 9. B. Bretica. Thunb. an Linn.? Hills near Simoda. A much branched bush.

This accords with ~~the~~ Himalayan B. Bretica, which Dr Hooker regards as an extreme form of B. vulgaris, except that all the leaves are quite entire and the ovaries are shorter.

Nandina domestica, Thunb. Fl. Jap. p. 9, & 149. Simoda; on shady hill-sides.

Carlophyllum thalictroides

Nichx. Fl. l. p. 205, t. 21, ~~Jorr. & Gray~~,
Gray, Man. ed. 2. p. 20. Leontice
thalictroides, Linn.; Jorr. & Gray, Fl. l. p.
52; Gray, Gen. Fl. l. t. 32. Hakodadi,
on hill-sides. Also gathered by J.
Small, in shady places, at Cape
Sangar, on the ^{northern} ~~North~~ end of Nippon.

In the discovery of this and the
succeeding plants ~~in Japan~~ ^{in Japan} ~~Mr. Wright~~,
two monotypic genera of this family
^{strictly} peculiar, as far as was known, to Es-
tern North America, Mr. Wright has
brought to view additional links of
the most striking character con-
necting the United States and the
Japan floras. Carlophyllum
grows in cool woods where the
soil is rich, from Canada to the
mountains of Carolina, extending
northwest to ~~Illinois~~ Minnesota. I
do not know how far westward it
has been met with in Canada.

These Japanese specimens are as like American ones as one pea is like another, unless some differences should be found in the floral envelopes or the Stamens, which have fallen in the specimen gathered at Hakodadi by Mr. Wright. This was gathered on the 11th of June; and ~~its ovaries~~ its forming seeds are just bursting through the thin ovary. Small's specimens were gathered on the 2nd day of July; and the seeds are developed about to the degree they are in New England at that season.

Diphyllaea cymosa, Michx.
 Fl. 1. p. 19, 203, t. 19, 20; Gray, Gen. Fl.
 1. t. 33, Ravines, ^{in damp shady places,} Cape Wya, at the north
 end of Jess, lat. 45° 30' 33", J. Small,
 July 13th, in fruit.

This is even a more remarkable discovery than the foregoing; as *Diphyllaea* was known only in the Alleghany Mountains, from the southern

(the frontiers of
 borders of Virginia to Georgia. Only
 two large and fruiting specimens
 were collected. These differ, however,
 from the American plant in having
 a lax pubescence on the veins and
 veinlets of the lower surface of the
 leaf (of which traces occur in our
 own plant), ^{as also on the pedicels,} and the leaf appears
 to be less lobed and cut than is
 usual in *D. cymosa*. I perceive
 no other difference. But flowers of
 the Japanese plant are a great
 desideratum. One of the vessels
 of the Expedition barely touched
 at Cape Romanzoff and Cape
 Soya. No doubt a proper explora-
 tion of the northern part of Japan
 would bring to light other North Am-
 erican types.

Nymphaeaceae.

Nuphar japonica, Db. Syst. 2. p. 12; Desess. Ic. 2. t. 6; Sieb. & Zucc. l.c. *N. lutea*, Thunb. Hakodadi; in ponds.

Blade of the leaf a foot long, 6 inches wide; intermediate in appearance between *N. lutea* and *N. sagittifolia*. ^{the American, very local}

Papaveraceae.

Chelidonium majus, Linn. Hakodadi: ~~in~~ along valleys and hillsides. Apparently indigenous. Siebold obtained a second species in Japan, *C. uniflorum*.

Fumariaceae.

Dicentra spectabilis, Db. Syst. 2. p. 110. ^(Dicytra)
Fumaria spectabilis, Linn. *Capporichis spectabilis* Borkh. in Roem. Archiv. 1797. 4. p. 46. *Eucapnos spectabilis*, Sieb. & Zucc. Fam. Nat. Fl. Jap. l.c. p. 14. Hakodadi, cultivated in gardens.

This plant, now so common and so many in cultivation is perhaps not indigenous to Japan, but only to the ^{adjacent} continent. But Middendorff did not ~~meet~~ ^{find} it in Eastern Siberia, but Bunge in Northern China ~~found~~ met with it only in gardens. There seems to be no good reason for separating this species from *Dicentra*. But in that case, ~~Bork~~ ^{Bork} Hauser's name would have precedence, as Pfeiffer has shown.

Corydalis incisa, ^{Willd.} Pers.; Sieb. & Zucc. l.c. p. 55. *Humaria incisa*, ^{Thunb.} in Act. Petrop.; Willd.[?] Hakodadi; on hillsides. ~~"Flowers purple"~~

This clearly Siebold and Zuccarini's plant; but it does not wholly accord with the description of Thunberg's. It is not like *C. nobilis* and *bracteata*, and the flowers are recorded as "purple". The tips of the corolla were certainly purple.

and the rest seems to have been purplish rather than yellow. The full grown leaves of the larger specimens are well ^{likened} ~~described~~ by Zuccarini to those of Parsley. The root is fibrous, and ^{the plant} not more than biennial.

Corydalis pallida, Pers.; Sieb. & Zucc. l.c. Fumaria lutea, Thunb. Fl. Jap. p. 277, non Linn. F. pallida, Thunb. in Act. Petrop.; Willd. Hakodadi, on hill-sides among bushes.

This is evidently Thunberg's as well as Siebold's plant, and in better specimens than those gathered by Dr. Morrow. Flowers three fourths of an inch in length, bright light yellow. Capsules an inch or more in length, linear, strongly torose, recurved, pointed with a slender style. Seed smooth or barely punctulate on the sides, densely and minutely muriculate-papillose on the

back.

(Pers.; D.D.)

(*Grydalis racemosa*, Hook. & Arn.
Bot. Beech. p. 258. *G. heterocarpa*,
Hib. & Sacc. l.c.; Gray, in Perry, Exped.
l.c. *Lumaria racemosa*, Thunb. in
Act. Petrop.; Willd. Sp. 3. p. 864. ~~Without~~
extremity of Stipson, in waste grounds,
J. Small.

Without much doubt this is
Thunberg's *Lumaria racemosa*, although
the bracts are not filiform, nor thrice
the length of the pedicels, indeed ~~seldom~~
little if any longer than the pedicels
when these are well developed. By
~~bracts a little shorter~~ "bractea flos-
culis brevioribus" is probably meant that
they reach nearly to ^{a level with} the upper side of
the corolla, which they often may.
The pods vary greatly considerably; the
seeds are minutely muriculate. — The
same as the plant from the Borin Islands,
but the specimens less rank.

22
Brucifera,

Nasturtium Indicum, DC. Syst. 2. p. 149,
Prodr. 1. p. 139? Simoda; in wet grounds,
~~flowers yellow.~~ } (Cardamine Indica, DC. Syst. 2. p. 248)

Although the flowers ^{are} said to be yellow, and the petals (which appear to be white in the specimens) are not minute. I take this to be the Nasturtium Indicum, of which, however, I have no specimens for comparison. ~~The specimens with unripe fruit the silicles~~ The silicles are remarkably long and slender, fully an inch long in length, ^{straight} and on pedicels barely 3 lines long in dwarf fruiting specimens, but shorter, somewhat arcuate, and on larger pedicels in other and less advanced specimens. The ^{Nasturtium} ~~species~~ gathered at ^{the} Loo Choo Islands is very similar, but has a distinct style.

Handwritten notes at the bottom of the page, mostly illegible.

Arabis hirsuta, Scop.; Ledeb. Fl.
 Ross. 1. p. 118. (Gurritia hirsuta, Thunb. Fl.
 Jap. p. 260) } "Var. borealis," A. borealis,
 Andr. 2.; Fisch. & Meyer, etc. } Hill-sides
 and shady woods, Hakodadi.

The specimens accord with those from
 Kamtschatka and Russian America (A.
borealis and A. Eschscholtziana) which
 Ledebour reduces to A. hirsuta, except
 that they are more developed and larger-
 leaved. The larger cauline leaves are from
 1½ to 2 inches long, ovate or oblong-ovate,
 and very obtuse, and more toothed as well
 as more softly pubescent than is usual
 in A. hirsuta. Some of the specimens
 are very loosely-flowered. They furnish no
 fruit, but forming pods are like those
 of A. hirsuta.

Arabis Japonica (sp. nov.): pubes-
 cens; caule valido folioso (opithumaeo ad
 pedalem); foliis dentatis, radicalibus obovatis

oblongisve in pedicellum attenuatis, caulinis
 ovatis oblongisve subcordato-amplexicaulibus;
 racemo densifloro; siliginis etiam con-
 fertis ~~strictis~~ erectis strictis, valvis sub-
 planis nervosis; stylo brevissimo; seminibus
 anguste alatis (vel apteris?). — *A. alpina*?
 var. *Japonica*, Gray in Perry. Jap. Exped. 2. p.
 307. Hakodadi, on ^{the} sandy plains ~~near~~
~~the sea~~; also (a more slender form) on
 shaded walls. Simoda, on rocky cliffs
 near the sea.

Allied to *A. alpina*, but distinct,
 as was formerly conjectured. The pubescence
 similar but with more simple hairs
 intermixed. Flowers equally large, "white".
 Raceme in fruit from 3 to 10 inches long,
 dense; the siliques erect, compressed,
 1½ ^{to} ~~inches long in the dwarf specimens, 2~~
 inches long, ~~in the taller ones~~ one line wide,
 scarcely if at all *torulose*; the valves
 with the midriena rather conspicuous below
 but indistinct or evanescent above the middle,
 and striate under a lens with several parallel

veins. Seed like those of *A. alpina*; in some immature ones not winged; in those with ripe fruit the wing is manifest.

Arabis lyrata, Linn.; Gray, l.c.
Hakodadi, on hills. "Flowers white."

The specimens accord well with the true *A. lyrata* of ~~North America~~ the United States, ~~except~~ ^{also} except that the style is very short; ~~and~~ ^{and} with *A. ambigua*, Db. and *Sisymbrium araboides*, Hort., except that the pods are less erect. And *A. petraea*, Lam. is probably not distinct, cotyledons accumbent; or the radicle occasionally oblique.

Cardamine Impatiens, Linn.; Db.
Prodr. l. p. 152. ~~Fields and Hill-sides,~~
~~Simoda and Hakodadi.~~ Flowers purplish.

Cardamine parviflora, Linn.; Db.
l.c. Simoda, in fields. ~~The leaves are~~
~~destitute of the auricles at~~

25

The leaves want the auricles at the base of the petiole; but the leaflets in the larger specimens are as much lobed as ^{they} are on the smaller specimens of *C. Impatiens*, which they much resemble.

Cardamine hirsuta, Linn.; DC. l.c.;
Hook. Fl. Bor.-Am. 1. p. 45. Simoda; in
wet places. ~~Flowers white.~~ Also, a
large form, Itakodadi along rivulets.
Flowers white.

Cardamine macrophylla, Willd.;
Ledeb. Fl. Ross.-Alt. & Fl. 2. t. 146;
Franch. & Meyer. Fl. Ochot. p. 15; Gray
in Perry. Exped. 2. p. 308, Itakodadi; on
wooded hillsides. Cape Sangar; in fruit,
small.

Capsella Bursa-Pastoris, Moench.
Simoda, and Itakodadi.

Draba nemorosa, Linn. *D. nem-*

oralis, Ehrh. Hakodadi, on sand-
Mills by the sea-shore, flowers yellow.

Isalis tinctoria, Linn. Hakodadi;
on the pebbly shore of the bay: Introduced?

Niolacea.

Niola Selkirkii, Benth, ex Goldie in Edinb.
Phil. Jour. 1822; Hook. Fl. Bor.-Am. 1. p. 75;
Jour. Gray, Fl. 1. p. 137? *N. umbrosa*,
Fries, Arct. ed. 2. p. 271. (1828)? Hako-
dadi; on hillsides.

The specimens are in fruit (they were
gathered on the 11th of July. As far as ~~can~~
they are susceptible of comparison they
accord with the Canadian *N. Selkirkii*,
which appears to me identical with
N. umbrosa of Fries, and ~~apparently~~ ^{this with *N. imbricaria*, Ledeb.} also ^{and}
^{perhaps} with *N. Kamtschatica* of Gingins.

Niola Patrinii, DC. Prodr. 1. p. 293;
Ledeb. Fl. Ross. 1. p. 245; Benth. in Lond. Jour.

Bot. 1, p. 482.
and Simoda.

2^d (and marshes)
Hill sides, Hakodadi

The specimens are all glabrous or nearly so: some have violet or purple; others nearly white flowers, which vary considerably in size. The smaller forms accord with the specimens Mr. Wright gathered at Hongkong: The largest have petals over half an inch in length. The leaves are ~~sandy subcordate at the base~~, mostly oblong and inclining to hastate, obtuse, rarely subcordate at the base, and abruptly contracted, ~~into a~~ in the larger specimens, into conspicuous winged petiole of 3 to 5 inches in length, the wing gradually attenuated downwards. Lateral petals moderately bearded. The white-flowered specimens remind us of *N. primuleifolia*, which has a similar root; the larger ones are more like *N. sagittata*; but the petioles are larger than in either. A specimen of this was named *N. Gmeliniana* in my account of the plants collected in Commodore Perry's Japan Expedition.

Niela sylvatica, Fries, Fl. Hall. (Var. *Canina*), & *And. Mant.* 3, p. 121. (*N. sylvestris*, Lam.?, *Sieb. & Zucc. Sylv. Gray, L. c.*)
~~*N. canina*~~, Koch. *N. canina*, *Smith, H.*

Var. *imberbis*: stipulis magis lacini-
ato-pectinatis, ~~magis~~ ^{hand raro} caulinis, ~~stipulis~~
petiolum subaequantibus; petalis im-
berbibus; ~~styl~~ stigmatibus minus recurvo.
~~cat.~~ — Forma *macrantha*: *N. sylv-*
atica, *macrantha* (*N. Kiviniara*, *Reichenb.*)
analogia. Itakodadi; on low sand-
hills near the shore, ^{Flower violet.} July. — Forma
micrantha. Simoda, on shady hills;
June 19 & 23.

The large-flowered form (of which
Williams and Morrow gathered a few
incomplete specimens) exactly accord with
N. sylvatica var. *macrantha*, Fries, from
the north of Europe except in the points
here indicated, — all of which ^{total} are questions
of more degree, except the want of beard
upon the lateral petals, which is not
likely to be of specific importance. (The

51
From gathered in Kamtschatka has
the beard, and has nearly wate, less
fringed stipules). The other specimens,
like those from ~~Bosnia~~ ^(but farther south) Ousima (al-
though gathered earlier in the season), are
~~more~~ slender and diffuse or decum-
bent forms, exhibiting only depauperated
or (so-called) apetalous blossoms. I
cannot say whether the ^{petals in} developed ~~petals~~ flowers
are beardless; ~~We have nothing like this~~
~~in V. striata and V. Muhlenbergii~~
We have not this species now, I sup-
pose, the true *N. canina* of Linnaeus
(as understood by ~~Larix~~ ^{Europe} and most con-
tinental botanists) in ~~this country~~.
But *N. striata* and *N. Muhlenbergii*
are their analogues in Eastern North
America, while *N. adunca*, Smith, on
our Western coast, more nearly answers,
in general appearance ^{at least} to *N. arenaria*
and *N. pumila* ^{of the} Old World.

N. acuminata - det.

Niela laciniosa (Gray in Perry, Exped. l.c.): subpubescens; caulibus e rhizomate erectis elongatis (pedalis et ultra) foliosis; foliis ovato-cordatis obtuse acuminatis; stipulis foliaceis magnis oblongis eximie laciniato: ~~vel pectinato~~ pinnatifidis vel pectinatis. petiolis dimidio brevioribus; pedunculis folia aequantibus; petalis caeruleis lateralibus barbatis, calcaris brevi scitiformi; sepalis linearilanceolatis. — Hakodadi; in vallis and much shaded places, J. Small.

The nearest analogue of this species is *N. striata* of the United States; but the Japanese plant is larger in all its parts, and has blue flowers; although the present specimens are not so stout as were those of Williams and Morrow, nor the stipules so foliaceous. The larger stipules are an inch long, and ^{deeply} pectinate-pinnatifid, but not glandular. The beard on the lateral petals is very coarse, like that of

N. canadensis. The spur is as long as that of *N. striata*, but ~~very~~ much thicker. The stigma is that of the Canina section.

Nida verecunda (sp. nov.): glabra; caulibus ^{repente?} et rhizomate ~~prostrato?~~ gracilibus erectis vel adscendentibus folia 3-4 reniformi-cordata gerentibus; stipulis lanceolatis ~~et~~ spatulatisve basi vel uno latere ~~sapientius~~ parce dentatis; sepalis lanceolatis; corolla albida imberbi, calcare brevissimo saccato; stigmate bilob^o ^{glabro}. Hakodadi (Williams and Morrow, a specimen too imperfect for description); on hill sides in damp shady woods ["flowers white; lateral petals, with purple ~~veins~~ veins"]; border of marshes. ["petals very light pink, with purple veins"]; July.

A neat species; in ^{size and foliage, and} aspect intermediate between *N. biflora* and *N. Canadensis*, and with nearly the stigma of the former. The latter specimens are

33
a foot high, thus only half that height,
all with slender but generally upright
stems, and in summer ~~apparently~~ (as
appears from some vestiges) disposed to
produce stolons. Leaves from 8 to 20
lines long, deeply reniform-cordate or
the lower reniform, ^{cul}crenate, thin, on
slender petioles. Stipules and sepals
not ciliate. Peduncles mostly ~~longer than~~
exceeding the leaves. Flowers, ^{rather} smaller
than those of *N. biflora*; the sac or
short and thick spur similar but more
prominent; petals beardless or with a few
hairs on the lateral ones.

Droseraceae.

Drosera rotundifolia, Linn. Simoda,
on shaded banks. (Not in flower.)

Caryophyllaceae.

Dianthus japonicus, Thunb. Fl. Jap. p. 183, t. 23. Island of Kiu-tiu, in crevices of rocks, on the coast.

In fruit; and with some slender later specimens in flower. These have the ^{upper} ~~cauline~~ leaves reduced in size, and the flowers few and separate ^{even} or single. The leaves are thickish and succulent.

Dianthus superbus, Linn.; Ledeb. Fl. Ross. 1. p. 285. Hakodadi, on hill-sides; also gathered by J. Small, on mountain-sides, in the crevices of rocks.

Probably indigenous; the species extends from Western Europe to Arctic and Altaic Siberia.

Horkneya peploides, Ehrh. ~~Torr. & Gray~~. Fl. var. *oblongifolia*, Ledeb. Fl. Ross. 1. p. 358. *H. oblongifolia*, Torr. & Gray, Fl. 1. p. 176. Hakodadi; on the pebbly shore of the bay.

The specimens accord with the plant
of the northwestern coast of America, ~~which~~
The same form occurs in the Fl. Ochot-
sis: although well-marked it is pretty clearly
~~no more than~~
~~just~~ a variety of *H. peplodes*.

Moeckringia lateriflora, Fenzl, "Sedeb.
Fl. Ross. 1. p. 371. *Artemisia lateriflora*, Linn.
Hakodadi; on hill sides (with narrow oblong
leaves); also on mountain-tops, Small (a
broader-leaved and more pubescent form).

The narrower-leaved form is exactly
~~the~~ like ^{Kamtschatka} ~~Finland~~ specimens; the broader-leaved
form is exactly the one common in the
North Eastern United States.

Lagima maxima (sp. nov.); ^{anua?} ~~per~~
~~anua~~, caespitans; caulibus elongatis spitha-
mais ~~diffusis~~ paucifloris; foliis linearibus
crassiusculis mucosis vel mucronulatis; floribus
saepius 5-meris; sepalis late ovatis demum
orbiculatis ecarinatis extus cuneo pedunculo
pl. m. glanduloso-histellis petala orbiculata

Capsulamque subaequantibus; Staminitibus
10 vel 8; Stigmatibus brevibus. — Mœh-
ringia see Ananaria n. sp. Gray in Perry,
Jap.: Exped. 2. p. 309. Hakodadi; com-
mon on walls, in yards, and road-sides,
Cape Sangar, Nippon, near the sea-
side, Small: July.

This striking species ~~would hardly~~
on account of its size would hardly be
taken for a Sagina, but, with the
habit of an Ananaria or Mœhringia,
it ~~has~~ ^{presents} all the characters of the former
genus. Leaves 6 to 9 ^{or even an inch} lines long, flat,
thickish, in some specimens rather rigid,
barely half or ~~two~~ thirds of a line wide,
acutish or mucronate acute, ciliate by
a scarious base, ^{mostly glabrous.} Stems conspicuously simple,
occasionally branching, ascending or soon
spreading, 5 to 10 inches long, bearing from
one to several flowers on upright pedun-
cles of about an inch in length, ^{glabrous or sparingly glandular-pubescent} Flowers
also large for the genus; the calyx ~~fully~~ a

(or nearly two lines?)

line and a half long, the broad and very obtuse sepals erect in fruit, a little shorter than the oblong and obtuse valves of the capsule which are opposite them. Petals white in anthesis a little longer than the sepals. Seeds very numerous, naked at the hilum, the testa minutely roughened. These specimens are pentamerous and decandrous: the imperfect ones gathered by Williams and Morrow were ~~decand~~ tetramerous. A variety of the species was gathered at ~~Agaña~~, ~~one of~~ the Loo Choo Islands, with more erect stems, and the glandular pubescence of the calyx and peduncles more conspicuous, and extending to the stems and upper leaves.

Arenaria serpyllifolia, Linn.; Thunb.
Fl. Jap. p. 186. Hakodadi, on sand hills
near the sea.

Stellaria uliginosa, Murr.; Ledeb.
Fl. Ross. l.c.; Gray. l.c. var. undulata, Hook.
St. undulata,

Thunb. l. c. Hakodadi; wet places in
mountain ravines.

Malachium aquaticum, Fries,
Fl. Hall. p. 77; Ledeb. l. c. Hakodadi;
roadsides, &c.

Cerastium vulgatum, Linn. var.
macrocarpum, Fenzl. in Ledeb. Fl. Ross.
1, p. 409. C. Fischerianum, Ser. pro parte.
Valleys and roadsides, Hakodadi

Resembles the Malaschkan plant;
a large form of C. vulgatum, with remark-
ably large petals.

Cerastium viscosum, Linn.; Fries, &c.,
C. ovale, Pers. Simoda and Hakodadi;
common.

Ternstroemia.

+ Actinidia platyphylla (sp. nov.):
foliis utrinque viridibus glabris nisi ju-
nioribus ad venas ~~foliis simplicibus~~
pube simplici pl. m. villosulis stem-
matis subcordatisve apice nunc retusis
~~sapissime~~ vel sapissime abrupte cuspi-
dato-acuminatis argutissime dupli-
cato-serratis, Costa subtus pl. m.
setosa; pedunculis cum calyce ru-
fo-puberulis. — Cape ^{Nippon} Sangar, July,
2; Cape Arya, N. end of Jesso,
July 13; in thickets on hill sides, ascending
tall trees, J. Small.

From the species which Mr. Wright
collected in the northern Loo Choo Islands,
and which ~~are~~ comparison with incom-
plete specimens of Trochostigma rufa
and T. arguta, ~~Dee~~ Sieb. & Zucc. (received
from the Leyden herbarium) shows may be
referred to both these nominal species
the present plant — ^{much} the most northern
of the genus — differs in bearing its

42
generally more orbiculate leaves of
the same green hue on both sides,
still more closely and ~~conspicuously~~
serrate with sharp and slender incurved
teeth, the cross-veinlets ^{or reticulations} are more
prominent, and the midrib beneath,
especially towards the base, ~~is~~ bears
more or less numerous setae or strigae
like those of *Saranja tristyla*, H. only
not so stout. ^{young} The ^{deciduous} pubescence on the
veins or ribs of the leaves beneath, moreover,
is of simple, slender and jointed hairs,
while that of *A. rufa* (as inspected in the
axils of the principal veins, where ^{traces} it re=
mains for some time) is mostly stellate.
The flowers gathered are all hermaphro=
dite, and accord very well ^{the figures of} with those
of *Trochostigma polygama*, Sieb. & Zucc.
The fruit not seen. Ovary glabrous,
calyx minutely ferruginous-pubescent
outside, appearing nearly glabrous to the
naked eye; the lobes evidently imbrica=
ted in aestivation. - It seems not un=

likely that all Zuccarini's species, except *T. volubilis*, are forms of one, ~~which in that case~~ of Champion's *Heptaea*? *latifolia*, from Hong Kong, must also be of this genus notwithstanding the apparently valvate aestivation of the calyx. In this the sepals are not truly valvate but, I believe, gamophyllous almost to their tips, which really overlap in the bud, and the thin and tender tube ~~splits~~ early splits down, ^{valvately, but} somewhat irregularly, as the corolla enlarges and expands.

I do not doubt that ^{Zuccarini, and also} Planchon, (who has identified *Trochostigma* with the obscure but earlier published genus *Actinidia* of Lindley) have correctly indicated the close affinity of this genus with *Saurauja*; but I ~~do not yet~~ ^{am not yet} convinced of the propriety of referring this group of plants to the *Silleniaceae*, according to the views of Lindley and Planchon.

Eurya Japonica, Thunb. Fl. Jap.
 p. 191; var Chinensis, E. Chinensis,
R. Br. in Atl. China, p. 8. t. 3. Kiusiu
and Tanegashima.

While Mr. Wright's Hong Kong
 specimens all belong to the true E.
Japonica ^(except that the style is longer) with glabrous shoots and
 mostly acuminate or acutish leaves,
 those he gathered in (Southern) Japan
 all have ~~smaller~~, less shining, mostly
 obovate-oblong, and obtuse or retuse
 leaves, and the young branchlets pubes-
 cent, exactly representing E. Chinensis
of Brown. Blume (in Mus. Bot.
Legd.-Bat. 2. p. 105) has shown how
 variable E. Japonica is; still he keeps
E. Chinensis distinct, - a view I should ~~have~~
 have adopted were it not for some low-
 growing specimens which are intermediate
 in foliage and show barely a slight pu-
 bescence on the new branchlets.

Camellia Japonica, Linn.
 Simoda, H.; thickets and hill sides.
Aurantiaea.

Citrus Aurantium, Linn. Simoda:
 cultivated.

& Citrus Japonica, Thunb. Fl. Jap.
 p. 192; ¹⁸⁰⁵ Sieb. & Zucc. Fl. Jap. 1. p. 35. t. 16.
~~Simoda~~: in flower.

Accords with the figure above
 cited, except that the petioles are
 wingless; so they are in a specimen
 communicated by Zuccarini.

Meliaceae.

Melia Azedarach, Linn.
 Simoda and Tanegashima.

Actinidia

Pittosporaceae,

Stachyurus praecox, Sieb. & Zucc.
Fl. Jap. 1. p. 43, t. 18. Simoda, June
16 & 23: in fruit.

Pittosporum Tobira, Kit.; Sieb. &
Zucc. Ham. Bot. Jap. p. 44. Simoda,
in flower. S. extremity of Kiu-siu; ~~with~~
with mature fruit.

Oxalidaceae,

Oxalis corniculata, Linn. Kiusiu;
in sand near the bay.

Geraniaceae.

Geranium erianthum, Fisch.
in Ob. Prodr. 1. p. 641; Hook. & Arn. Bot.
Bech. p. 113; Torr. & Gray, Fl. 1. p. 206; Ledeb.
Fl. Ross. 1. p. 464; Grav. & Meyer, Fl.

Ocht. p. 25. Hakodadi, and north end of Kippou (Small): hillsides, thickets, and sandy plains. Corolla purple.

This is new to the Japan flora; but naturally to be expected, as it occurs in the Ochtosh flora and in Kamtschatka, and in the islands of the N. W. Coast of America.

Figure!

Simarubacea.

Picrasma Japonica (sp. nov.): frutex
ergyalis; fere glaber; foliolis sapissime
13 ovatis acuminatis serratis basi ab-
rupta vel subcordata petiolulatis; floribus
~~femineis~~ ^{fertilibus} ~~strobilomorphotis~~ ^{5-4-meris} pluribus in
cyma laxiflora ~~ciliatis~~ ^{fusco-} pubescente;
pedunculo complanato: ~~filamentis gla-~~
~~bris~~ — Iwanai, W. Coast of Jesso, lat.
43°, J. Small. (in mountain ravines.)

This is recorded as a sprawling shrub,
6 feet high, with greenish flowers. Only

44
~~The~~ fertile, subhermaphrodite specimens
were gathered, in blossom and with
young fruit. The species is evidently
allied to *P. ailanthoides*, Planchon (*P.*
ailanthoides, Brunze), of Northern China,
of which only the male plant is known.
Like that species the petals are more
or less pubescent inside. But the
leaflets, besides being more numerous,
are petiolulate, ~~of the same~~ green
both sides, conspicuously acuminate,
the serratures not glandular, the midrib
when young rusty-pubescent, the flat-
tened peduncle and the branches of the
loose cyme manifestly pubescent. There
are no stipuliform appendages. Flowers
mostly ^{occasionally tetramerous,} pentamers, about 4 lines broad
when expanded. Filaments ^{short,} ~~not longer than~~
~~the anthers~~ ^{sometimes,} entirely glabrous and naked;
~~anthers mucronate, disk very large,~~
~~flat.~~ sometimes a little hairy; anthers
mucronate. Disk flat, soon very

Large. Ovaries opposite the petals;
styles united below, at length separable.
Young fruits smooth and even.
The foliage is intensely bitter to the taste.
The petals do not enlarge ^{nor thicken} after flower-
ing, but are merely marcescent.

Rutaceae.

Pantheoxylum piperitum, DC.;
Sieb. & Zucc. Fam. Nat. Jap. p. 29;
Gray in Perry, Jap. Exped. p. 309.
Hagara piperita, Linn.; Thunb. Fl. Jap.
p. 64. Simoda, and North end of
Nippon; in dense thickets, &c. The fertile
plant; in young fruit.

~~Euodia? Japonica~~

Euodia ramiflora (sp. nov.);
foliis alternis simplicibus obovato-
oblongis seu obovato-cuneatis saepe
acuminatis, petiolo brevi; pedunculis
axillaribus brevissimis; Carpellis lunatis
ad ^{lateralibus} ~~lateralibus~~ striato-reticulatis. — Simo-
da; a large much spreading bush, or
small tree, in thickets, on hill sides, June,
J. Small.

The specimens bear ~~sap~~ full-
grown fruit only, in the axils of last

years fallen leaves. From the appearance of the foliage and the fruit, I refer the plant to *Eurodia*. Branchlets slender, glabrous or nearly so, grayish. Leaves on petioles of from 1 1/2 to 3 lines long, all alternate, thin and membranaceous, glabrous above, pale and minutely downy beneath, 3 to 5 inches long, entire, copiously pellucid-punctate under a lens, the larger ones acuminate. Flowers not seen. Fruits ~~in separate fascicles~~ ^{in an axillary} 2 or 3 ~~together~~ in a fascicle on pedicels only 3 lines long, or several clustered on the sides of a rachis or common peduncle which is at most half an inch long of 2 to 4 ~~not at~~ ^{pruigent to the taste and} dry cocci or carpels, strongly scented; the carpels about 4 lines long, erect, separate, laterally compressed but turgid, slightly ridged on the back and pointed at the tip, glabrous; the thin exocarp chartaceous, reticulated on the back, and striate-nigose on the sides by ~~salient~~ ^{parallel} and curved salient

nerves which are more or less reticulated, and furnished with oil-receptacles in the interstices. Endocarp separable, chartaceo-crustaceous, white, smooth and even. Seed ^{solitary} ampeligenous, pendulous from ^{about} the middle of the cell: mature ones and embryo not seen.

Skimmia Japonica, Thunb. Fl. Jap. p. 476 2; Sieb. & Zucc. Fl. Jap. p. 128, t. 68, (Kämpf. Le. Del. t. 5;) Cape Romanoff, N. end of Jesso, Lat. 45° 26'; in a wooded swamp, J. Small. In fruit.

This has been referred to several different orders; it appears to belong to ^{the} Rutaceae.

Boriariaceae.

Boriaria Japonica (Sp. nov.): glaberrima; foliis sarmentorum ~~ovatis~~ lanceolato-ovatis seu oblongo-ovatis, ramorum florif. orbiculatis; floribus (pro genere maximis) ^{racemis brevifloris} monaeis; filamentis gracillimis. — Hillsides, Simoda; a much spreading bush, 5 to 9 feet high.

These specimens ~~are in fruit~~ (gathered late in June) are in fruit. At the same station Drs. Williams and Morrow gathered a flowering specimen. Leaves chartaceo-membranaceous, of the same pale green hue both sides, 3-nerved, and with indications of an additional lateral pair, the veinlets inconspicuous; the leaves of the sterile sarmentaceous shoots (except the lowest pairs) ovate-lanceolate or oblong-ovate, and acuminate for the most part gradually acuminate, 2 to 3 inches long, usually distichous (as is common in the genus) by the torsion of the internodes, short-petioled; the lowermost and

Those of the flowering shoots smaller, nearly sessile, and orbicular. Lower bracts similar but smaller, the upper ones obovate and oblong. Racemes ~~one or two~~ 1 or 2, in fruit only 2 to 5, inches long, erect or spreading, rather ~~loosely~~ loosely flowered. Sepals and petals ovate-orbicular; the ^{former} latter 2 lines long; the latter becoming about 3 lines long in fruit. Filaments (after anthesis) fully 3 lines long, capillary. No pistils in the staminate, and apparently no stamens in the pistillate flowers. Carpels as in *C. myrtifolia*, but larger, over 2 lines long. — This is a new type for the Japan flora; but there is a *Sinhalay* or *Coriaria* (figured by Wallich, which, judging from Wallich's figure, can hardly be the S. European *C. myrtifolia*. Although the genus is wanting in the United States there are indications of a species in Mexico (*C. atropurpurea*, Dr.). The rest of the species known are in the Indies and in New Zealand.

5

Anacardiaceae

Rhus Toxicodendron, Linnaeus, var. β ,
radicans, Torr. & Gray, Fl. 1. p. 218. R. ra-
~~Toxicodendron~~ dicans, Linnaeus, Sc. H. Hako-
dadi, creeping over rocks and climbing,
and with young fruit, - wholly
Fine flowering specimens, ~~well~~
agreeing with the large and entire-leaved
form of R. Toxicodendron in the Eastern
United States (R. radicans, Linnaeus); the
largest leaflets, as with us, fully 6 inches
long. The plant of the Pacific coast
of North America (R. Alata, Sonch. R.
diversiloba, Torr. & Gray) is ~~probably~~ apparently
only another form of the polymorphous
and widely spread R. Toxicodendron. The
^{young} drupes of the Japan specimens are ob-
scurer and sparsely bristly, as they are not
rarely in the American forms. Some of
the leaves show indications of sinuate
lobes.

Rhus vernicifera, Sc. (which I possess
from the Leyden herbarium) appears to dif-

few so little from the *R. Venerata* of
Eastern North America (mainly in the
pubescence which in some cases is scarcely
more than in some of our forms, and in
the rounded base to the leaflets) that
Linnaeus ~~was perhaps~~ may have been
not far wrong in uniting them, under
the name of *R. Vernix*.

Vitacea *V. flex*

Vitis Labrusca, Linn.: Thunb. Fl. Jap. p. 103. V. ficifolia, Brongn., Enum. Pl. Chin. Bor. p. 12. V. Thunbergii, Sieb. & Zucc. Jam. Nat. Jap. p. 40. Simoda, also on the northern end of Kipsan, and at Hakodadi, climbing over trees, on hills and mountain-sides.

The blossoms are all staminate. These as well as the foliage, so well accord with ~~the~~ our Eastern N. American V. Labrusca, to which Thunberg referred it, properly enough, it would seem. Baccarini's V. Thunbergii (which I have from the Leyden herbarium) is a smaller and deeply cut-leaved form, such as we often meet with in the United States.

55
Rhamnaceae.

Rhamnus catharticus, Lin.? Nakoz
Dadi, on hills.

The specimens, with forming fruit
and mostly 3-cleft styles, are too like
R. catharticus to be separated, unless
there should be some character in
the flowers. I suspect that the species
should include R. Saururus and
R. virgatus ^{12x6.5} and R. globosa, Bunge.

Aquifoliaceae.

Ilex crenata, Thunb. Fl. Jap. p. 78;
Sieb. & Zucc. Journ. Bot. Jap. 1. c. p. 39.
Simoda, on hill-sides; a low, spreading
bush.

Resembles I. (Winteria) glabra, Gray,
Man. (Prinos glaber, Lin.) of the United
States; but the flowers are tetramerous.
~~Fruit not seen~~ ^{even} Drupe rather large;
pyrene turgid, ¹¹ cartilagineous, thin, sparsely
veiny.

(Blume, Bijdr. p. 1149)

Ilex integra, Thunb. Fl. Jap. p. 77;
 Sieb. & Zucc. l.c. ^{Singapore hills} ~~hill~~ sides, in dense
 thickets; a large tree, J. Small.

The specimens bear full-grown fruit.
 Pyrene 4, thin, with a broad and
 slightly concave back, the angles acute.

Celastraceae.

Eunymus Japonicus, Thunb. Fl.
 Jap. p. 100; Hook. & Arn. Bot. Beech. Voy. p.
 261, t. 54; Sieb. & Zucc. l.c. p. 43.

Southern end of the island Kin-siu.

The specimens are in fruit; the
 globular and obscurely-lobed capsules
 over half an inch in diameter. The
 leaves, said by Thunberg to be an inch
 long, are twice that length in these
 specimens and broadly obovate.

~~Eunymus Japonicus~~

Euonymus Sieboldianus, Blume,
Bijdr. p. 1147; Sieb. & Zucc. l.c. ^{E. europaeus, Thunb. l.c.} Hakodadi, on hills. Flowers greenish yellow.

This ^{much} resembles E. europaeus, but has broader petals, and ~~accords~~ (as in ~~does E. verrucosus~~) ^{call with} ~~with~~ the American species) ~~in the~~ ^{unless} very short filaments. The fruit, which we have not ^{is said by Blume} seen ^{is said} to be verrucous, ~~to~~ in this respect it would resemble E. americanus. ~~seem to smooth the~~ The slight angles of the stem are corky-~~ridged~~ ridged in one specimen.

Euonymus Hamiltonianus, Wall., in Roxb. Fl. Ind. ed. Wall. 2. p. 403, Don, Syst. 2. p. 4. Simoda, Straights of Sagar, and Hakodadi; on hill sides. A large shrub.

The specimens accord very well (except that the leaves are broader and larger, and oval or oblong, instead of lanceolate-oblong) with a specimen of E. Hamiltonianus, ~~from~~ ^{of} Nepaul, from the Botanical Garden of Calcutta. In

-7-

This, however, the petals are not "lan-
ceolate and cordate", but ^{just} ~~elliptical~~ ^{as}
~~long~~ as in the Javan plant, ellipti-
cal-bloug ^{very} obfuse, ^{and} ~~at both ends~~, sessile
by a broad ^{tr} truncate or retuse base.
Ovules in the sub-sterile plant many-
flowered, shorter than the leaves; in
the more fertile plant fewer-flowered.
^{filaments tetranervous, properly half an inch in diameter when fully expanded}
Ovella white or greenish white; an-
thers purplish, on slender filaments.
The ~~partly-grown~~ forming fruit is smooth,
obovate, moderately and narrowly 4-lobed
or ~~rather~~ with ^{incipient} wing-like angles. Branches
and branchlets obscurely ^{or at length} 4-sided, ^{terete} naked.
Leaves much like those of *E. atropur-*
purens, 2 to 5, commonly about 3, inches long.
This can hardly be Blume's *E. subtri-*
florus.

Euonymus latifolius, Scop. Fl.
Barr. 1. p. 165; DC. Prodr. 2. p. 4; Ledeb. Fl.
Ross. 1. p. 498. Hakodadi, and Cape

Sanguis (small): a large spreading bush on mountain-sides. "Flowers purplish-green". This ~~is~~ very exactly resembles the South European and Caucasian *E. latifolius*; but the forming fruit shows no indications of winged angles.

Delastrous articulatus, Thunb. Fl. Jap. p. 97; Sieb. & Zucc. l.c.; Gray in Perry, Jap. Exped. 2. p. 309. Kin-sin, at the southern extremity; with mature fruit; Simoda, with forming fruit; Hakodadi; in flower.

A branching, more or less scandent plant, with greenish flowers and yellowish fruit; the seeds enclosed in a pulpy red arillus. The leaves vary greatly. ~~the~~ ^{in the} more southern specimens ^{the leaves} like those from Soobos, are ovate or oblong, and rather obscurely serrate. In those from Hakodadi, the leaves are larger and thinner, the larger ones orbicular, ~~and~~ 3 inches or more in diameter, abruptly acuminate or

cuspidate, and very sharply serrate with
fine and sharp, incurved, mucronate teeth.
No reason appears for the specific
name. It is probable that the species
includes ^(C. scandens, Thunb. in Ling. Trans. 2, p. 33/2) ~~Thunberg's~~ *C. punctatus* and *C.*
striatus also. According to Bunge,
it occurs in Northern China.

Sapindacea.

Staphylea Bumalda, ^{Bl.} Sieb. & Zucc.
Fl. Jap. 1, p. 180, t. 95; Gray, l.c. p. 309.
Bumalda trifolia, Thunb. *Fl. Jap.* p. 114.
Shaded hillsides, Satodadi; in flower,
and with ~~young~~ forming fruit.
A widely spreading shrub with white
flowers.

Euscaphis staphyleoides, Sieb. &
Zucc. *Fl. Jap.* 1, p. 124, t. 67. Simoda,
on hillsides.

Asculus turbinata, Blume, Kumph.
3. p. 195. As. chinensis, Sieb. & Zucc.
Jam. Nat. Jap. p. 46. vix Burge? Itako=
dadi, on the sides of mountains; in flower,
June²⁰.

A small, widely spreading tree; petals white, with an orange-colored spot at the summit of the claw. — This interesting species is well described by Blume, except that he had seen only abortive ovaries. The raceme-like thyrsus is 7 to 9 inches long. The petals (which are much smaller than those of A. hippocastanum, while the stamens are proportionally larger) have a strong fold at the base ^{of the blade} on each side, like the callus of some Phaseolae, and the ~~margin~~ ^{margin} is somewhat erose margin is ciliate. The filaments are not obscurely scabrous, but sparsely hirsute, below. Fertile ovary obovate, sessile, minutely pubescent; the forming fruit shows no indication of muciccate projections. The species is a true As-

culms, although the fruit be smooth,
and the petals only four. Blume
adduces Thunberg's *R. Paria* as a
synonym, but Thunberg could hardly
have applied that name to the
present species. It may be the imper-
fectly known *R. chinensis* of Bunge;
the description is applicable except
that the leaflets are not petiolulate.

Under the name of *R. dissimilis*,
Blume indicates a second Japanese
species, which would seem to belong
to the same type as *R. parviflora*,
^{Nutt.} of the Northern United States.

(& 2c. Pl. Rar. Dec. 5,

Acer pictum, Thunb. Fl. Jap. p.
161; Sieb. & Zucc. Fam. Nat. Jap. p. 48;
Gray, l.c. Hakodadi; a common
shade-tree; June 11-27, with young fruit.

Two forms were gathered, differing
considerably in foliage; one answering
to var. β , Sieb. & Zucc. l.c. and with
having short lobes to the leaves which re-

resemble those of *A. platyoides*; the
other, var. γ , with long ~~and narrow~~
tapering lobes.

Polygalaceae.

Polygala Japonica, Hook.; DC.
Prodr. 1, p. 324; Sieb. & Zucc. Fam.
Nat. Jap. p. 44; Gray, l.c. Simoda
and Hakodadi. ~~Flowers purple or greenish~~
~~ish purple.~~

The leaves vary from orbicular
to linear-lanceolate. Flowers purple
or greenish purple. In habit, &c.
it most resembles ^{the American} *P. crenulata*, Benth.
(which is *P. californica*, Witt.) and *P. Lind-*
heimeri, Gray.

Leguminosae

Thermopsis fabacea, Hb. Prodr.
2. p. 99; Hook. Fl. Bor. Am. 1. p. 128; Ledeb.
Fl. Ross. 1. p. 511; Trautv. & Meyer, Fl.
Ocht. p. 26; ^{Gray, in Perry, Jap. Exped. 2. p. 380.} ~~Lophora~~ fabacea, Pall.
Astrag. p. 122, t. 90. Hakodadi; on

the sandy shores of the bay; June,
in flower and with young fruit pods

The fruit of this species (which
is also described ~~as~~ in the Flora
Ochtensis, above cited) enables us to
complete the comparison of this, clearly
the genuine T. fabacea, with the North
American forms. It is evident that
T. fabacea extends from Japan (and
even from Kakasima, an island north
of the proper Soo Choo group, where Mr.
Wright gathered a form with narrow
and smaller stipules); the Kurile islands,
and the shores of the Ochotsk Sea to
Oregon and California; and eastward
to the Rocky Mountains in New Mexico.

Now to the species belongs the var. B.
Torr. & Gray, Fl. of T. macrophylla,
Hook. & Arn.; also T. macrophylla,
Torr. in Bot. Whipple Exped. (Pacif.
R. R. Expl. 4, p. 81); while the T.
montana of Nuttall is apparently
no more than a variety with the
legumes shorter, more strict, perhaps
less stipitate in the calyx, and more
persistently downy. The pods of the
Japan plant are $2\frac{1}{2}$ or 3 inches
long, 3 lines wide, flat, erect or ~~erect~~
and straight, or falcate and ~~or a~~
~~little~~ rather erect-spreading, tapering
at the base into a stipe hardly equal-
ling the persistent calyx, softly and
canescently downy when ^{quite} young, at length
only sparsely pubescent, 11-14 seeded.
I have seen no fruit of Californian
specimens. Of those from the interior
of Oregon ^(reparable to T. montana, Nutt.), one collected by the Rev. Mr.
Spalding has similar pods ^(about 3 inches long and $2\frac{1}{2}$ lines wide), only rather
stricter and silky-pubescent at maturity.

4
Fendler's New Mexican plant has shorter
and less downy pods than the last,
while a form from Burke's Oregon col-
lection (with narrow, nearly lanceo-
late leaves, has similar but more
downy legumes. *T. macrophylla*, Hook
& Arn. (which apparently has not been
gathered since Douglas's time) may
be distinguished by its oblong-lanceo-
late and very villous pods (4 lines wide
and less than 2 inches long) and nearly
sessile in the calyx), and the stems, pe-
tiols, and lower surface of the leaf-
lets are conspicuously villous. Its
nearest ally is *T. caroliniana*, M. A. Burtis,
of the Northern Alleghany Mountains,
which is glabrous, except the inflorescence,
and the ~~the~~ append. linear-oblong pods very to-
mentose. *T. rhombifolia*, Nutt. as far
as known to me, differs from *T. fabacea*
chiefly in its smaller size and in the
recurved, strongly falcate legumes. It
remains to be seen if these characters are

T. Chinensis, Benth, which was gathered on islands
between Kien-seu and the Loo-choo group, differs appears
to differ from *T. pubacea* mainly in its narrow stipules
constant, ~~to~~ ~~the~~ and deeper-lobed calyx.

As to these and all the American
species, forming the section rather in-
appropriately ^{named} called by Benth and Bap-
tisia (^{the} since they are, least like *Baptisia*
in fruit), the narrower and flatter pod alone
clearly distinguishes them from *Baptisia*.
For the stamens are deciduous with or
soon after the petals, the vexillum
is no more reflexed at the sides than
in several *Baptisias*, ~~nor~~ ^{and} is the base
of the calyx is often abrupt. I have
not seen the fruit of any *Euthermopsis*.
T. lanceolata, R. Br. probably is not
American. Although said by Ledebour
to inhabit Kamtschatka and
Nootka Sound, Ledebour does not
extend its range east of Dahuria.

~~The aspect of the~~ (Thunb. Fl. Jap. p. 291;

Lobus corniculatus, Linna.; Db.
Prodr. 2. p. 214; Hort. f. Fl. Jasm. 1. p.
 98. Hillsides and sandy banks,
 Simoda, southern end of Kiu-siu,
 and Tanagasima Island.

This seems to be widely diffused
 in Japan, and is probably indigenous
 there, as well as in Australia and
 the whole length of the Himalaya Moun-
tains.

Ludwigia decorata, Link. in
Jour. Lond. Bot. Soc. 1. p. 58, J. Bot. Reg.
 1846. t. 42. Simoda, Williams and
Morrison. (Omitted in the account of
 their collection. Perhaps cultivated. It
 was introduced into European gardens
 from Shanghai.)

7

Astragalus lotoides, Pall. Astral.
no. 106; Ob. Prokr. 2. p. 282. A. sinic-
us, Linn. Mant. p. 103; Thunb. Fl. Jap.
p. 290. A. umbellatus, Lam. Dict. 1. p.
316; Pers. Syn. 2. p. 335. Tanega-
sima (with fruit); Hakodadi (in flower).
J. Small. (with purple flowers.)

A pretty species, } De Baudelle
wrongly attributes to Lamarck, instead
of Pallas, the name of lotoides.

Orobis lathyroides, Linn.; Pall.;
Sedch. Fl. Ross. 1. p. 688. On the sides
of mountains near Hakodadi.

A Siberian species, not before noted
east of Dahuria. In a single instance
~~the~~ the petiole is replaced by a termi-
nal leaflet!

Lathyrus palustris, Linn.; Sedch. l. c.;
Travtr. & Meyer. Fl. Ochot. p. 29. Hakodadi,
on the border of marshes.

Somewhat pubescent forms, with

71
narrowly elliptical and with broadly
linear leaflets.

Lathyrus maritimus, Bigel.;
Torr. & Gray, Fl. 1. p. 273. Pisum mari-
timum, Linn.; Thunb.; Ledeb. Fl. Ross.
1. p. 661. Lathyrus Japonicus, Willd.
Sp. 3. p. 1092, ex char. Sea-shore,
Simoda, Hs.

Vicia Japonica (Sp. nov.);
pedunculis 6-14-floris folia 6-9-juga
subaequantibus; foliolis subalternis
ellipticis seu obovatis obtusissimis
retusisve mucronatis membranaceis
nervoso-reticulatis, ^{infirmis cauli adpressatis;} stipulis semisagittatis
parvis; dentibus calycis inaequalibus sub-
ulatis brevibus, infimo tubo dimidio brevioribus;
~~ore~~ ^{late} corollae ^{late} purpurea; stylo supra-
medium aequaliter pilosulo. — V. Gro-
bus? Gray in Perry, Jap. Exped. 2. p.
310. Variat, 1, foliolis supra glabris
subtus cum caule pedunculis calycibusque

72
parce pilosulis vel glabratis, glabellis,
2. molliter pubescens. — Simoda,
on sandy flats by the sea: Hakoda-
ji, on hillsides.

I cannot identify this species with
any European or Siberian one; per-
haps it is nearest *N. pallida*, Turcz.
The glabrate form much resembles
N. Americana, Muhl. (including *N. Ore-
gana*, Nutt.) which ranges from the
Atlantic to the Pacific; ~~sea board~~ but
the venation of the leaflets is similar: ~~for~~ ^{but}
the stipules are ~~much the same~~ nar-
rower and generally entire, ~~the~~ ^{the} ~~tutth~~ ^{vary is} more stipitate,
of ~~the~~ calyx rather shorter, and the style
wants the villous tuft at the apex so
conspicuous in the American plant.

Vicia tetrasperma, Loisel. *Erwan*
tetraspermum, Linn.; Thunb. Fl. Jap. p. 284.
Borders of fields, Simoda.

Wistaria sinensis, Sieb. & Zucc.
 Fl. Jap. 1. p. 90. t. 44. *W. chinensis* &
floribunda, Sieb. *Glycine sinensis* &
floribunda, Auct. Hakodadi; climbing
 to the summits of large trees.

Millettia Japonica, *Wistaria*
Japonica, Sieb. & Zucc. Fl. Jap. 1. p.
 88. t. 43. *Kiu-siu*; on hillsides: a
 slender vine climbing over bushes.

Only ripe fruit and the rem-
 nants of leaves were collected. Legumes
 6 inches long, 4 or 5 lines wide, two-valved.
 — Benthams (in Pl. Juhugh. p. 249, adn.)
 enumerates *Wistaria chinensis* as a species
 of *Millettia*, but the species intended
 must be *W. Japonica*, Sieb. & Zucc.,
 which clearly is of that genus, while
W. sinensis Sieb. & Zucc. is a true
Wistaria.

Casalpinia sepiaria, Roxb. Fl. Ind.;
 Gray in Perry, Jap. Exped. 2. p. 310. *C. Japonica*
 Sieb. & Zucc. Fam. Nat. Jap. p. 10. *C. cristata*, Thunb.
 Simoda; on shaded hill sides. Flowers yellow,

7
Rosacea

Prunus (Armeniaca) Mume, Sieb. & Zucc. Fl. Jap. 1. p. 29, t. 11. Simoda, a large bush, on hill sides, in thickets, also around dwellings, (in fruit.)

Probably not specifically distinct from P. sibirica, which again may be the same as the common Apricot.

Prunus: undetermined, cult. Hakodadi.

Prunus (Cerasus) Pseudo-cerasus, Lindl. in Trans. Hort. Soc. b. p. 91; Sieb. & Zucc. l.c. Simoda ^(on hills); in fruit.

"A small, spreading tree; fruit rather acid and bitter. In one form the umbels ^{remain} ~~are~~ sessile or nearly so, and the leaves are smaller and narrower; the flowers not seen.

Prunus (cerasus) Virginiana, Lin.?
P. paniculata, Thunb. Fl. Jap. p. 200? non
Bst. Reg. Itakodadi; a low bush,
 in mountain ravines.

The calyx, with the petals and stamens,
 has fallen. The racemes with short pedicels,
 and the foliage accord with the Choke-
 cherry of Eastern North America, better than
 with P. Padus of Europe. The fruit
 would settle the question; the stone of
P. Virginiana being smooth and even,
 that of P. Padus, ~~the~~ rugose. What Dr.
 Hooker names cerasus Padus, from
 the Himalayas, appears to me different
 in species (although the stone is rugose)
 having short pedicels, roundish petals,
 and leaves inclining to lanceolate. It
 is to C. Padus ~~some~~ somewhat that
 which our Western C. demissa is to C.
Virginiana. The P. Padus of Kamts-
 chatka and of the Ochotsk flora is
 probably the same as the Japan plant.

7

Spiraea betulifolia, Pall. Fl. Ross.
1. p. 33. t. 16; Torr. & Gray, Fl. 1. p. 464; Ledeb.,
Fl. Ross. 2. p. 14; Franch. & Meyer, Fl. Ochot.
p. 31. Mountains N. E. of Hakodadi.
S. corymbosa, Raf.; Torr. & Gray, l.c.

This is an addition to the Japan flora, and one which was to have been expected, since the species occurs both on the eastern coast of Siberia, and on the western coast of N. America. Thence it extends to the Rocky Mountains, and reappears in the Alleghany Mountains, as *S. corymbosa*, Raf.

S. salicifolia, which extends from eastern and northern? Europe through Siberia to the island of Schantar in the Ochotsk Sea, is most likely ^{in the neighboring} for the northern part of Japan; and it reappears in ~~the~~ Eastern North America.

S. Japonica, Linn. f., near *S. salicifolia*, is *S. callosa*, Thunb. The former name, being the older, should have been adopted.

Spiraea palmata, Thunb. Fl.
Jap. p. 212. Hillsides, Hakodadi.
Also, Straights of Pongar? in shaded
ravines. J. Small; a variety with larger,
thinner and more deeply cleft leaves,
the lobes, long acuminate, incised, and
separated by narrow sinuses.

Mr. Wright gathered only a single
specimen, in blossom ^(petals white; calyx with a tinge of red), which clearly
belongs to Thunberg's *S. palmata*. It
differs from *S. Kamtschatica*, Pall. only
in being glabrous, more so than
Dr. Hooker's var. *glabrata*, from Simla,
and in the ^{rather} shorter styles and glabrous
ovaries, excepting a ^{slight} ~~little~~ villosity on their
back. It is doubtless conspecific
with *S. Kamtschatica*, with varies
in these respects. I should have
adopted this better known name, published
in the same year ~~with~~ with Thunberg's,
if it were not most likely (as the speci-
mens gathered by Mr. Small partly
indicate) that the species will ~~also~~

include *S. palmata*, Pall. Fl., & Fl. Ross., the *S. digitata*, Willd., also. In Small's specimens, the ovaries are nearly glabrous.

Spiraea Aruncus, Linn.; Pall.
Fl. Ross. 1. p. 39. t. 26; Torr. & Gray, Fl.
1. p. 417; Ledeb. Fl. Ross. 2. p. 16; Trautv.
& Meyer, Fl. Ochot. l. c., non Thunb.
 Shaded hillsides and valleys, Hako-
 dadi, and both sides of the Straits of
 Sangar.

This species is scarce or local both in Western Europe and in the Eastern United States (being here confined to the Alleghanies and their prolongations. But it extends through Northern and Central Asia to the Pacific, to Japan, N. W. America, and the Rocky Mountains. In Japan, the Saima-layas, and in our Alleghany Mountains, but not elsewhere, it is accompanied

by species of the analogous genus
Astilbe, very much resembling it in
 general appearance. Thunberg's *S. Brun-*
cus is clearly an *Astilbe*; nevertheless ^{we now have} the true *S. Brun-*
cus from Japan. The petals, in the Japanese as in
 our own plant, are commonly, if not
 always, convolute in estivation, as in
Gillenia.

Sanguisorba tenuifolia, Fisch.;
 Link. Enum. 1. p. 144; DC. Prodr. 2. p. 593;
 Ledeb. Fl. Ross. 2. p. 28; Trautv. & Meyer.
 l. c. p. 35. *S. alba* & *S. Canadensis*,
 Pall. It. ex Ledeb. Cape Romanoff
 and Cape Soya, north end of Yesso;
 in marshes, J. Small.

Large plants of the white-flowered
 form. Differs from *S. Canadensis* main-
 ly in the ^{more} downy pubescence of the caly-
 (which disappears in specimens from the opposite coast), &
 outside, and in the sessile leaflets,
 none of which are cordate. — *S. al-*
pina, Bunge is probably only a Siberian

or local, through Northern and
Central Asia to Japan, and
and to the mountains of the Eastern
United States, where it is also local.
In Japan, as in the Himalayas
Mountains, it is accompanied by
a species of *Attila* much resembling
it in general appearance.

Variety of *A. Canadensis*, ~~as well as~~
~~*A. Silchester*~~

Agrimonia Eupatoria, Linn.; var?
~~near *A. pilosa*, Ledeb.~~ Hakodadi;
along road-sides.

Too young for accurate determination; but appears to be intermediate between *A. Eupatoria* and *A. pilosa*; which is what Bunge remarks of his *A. viscidula* from Northern China. Only a single specimen was gathered.

Anemone strictum, Ait. Hort. Kew.
(ed. 1.) 2, p. 207; Torr. & Gray, Fl. 1, p. 421;
Ledeb. Fl. Ross, 2, p. 22. Hakodadi;
on the shore of the bay, in valleys, and
on walls in the town.

Sagittaria palustris, Scop.; Linn.
Mon. Potent, p. 73. *Comarum palustre*,
Linn. Hakodadi; in marshes.

Potentilla Anserina, Lin.,
Hakodadi; in marshes near the har-
bor.

Potentilla fragarioides, Lin. (Gmel.
Fl. Sib. 3. t. 34. p. 2); Lehm. Pot. t. 4, & Rev.
Pot. p. 42; Ledeb. Fl. Ross. 2. p. 38; Gray,
l.c. Hill sides, ~~Sim~~ Simoda.

A single specimen, with extremely
large radical ^{on a stipule} leaves, ^{the largest} a foot long, and
in fruit. It shows that the ambigu-
ous, larger specimens gathered by Williams
and Morrow ^{truly} belong to this species. - P.
stolonifera, Lehm. (which we have from
Kamtschatka, and which appears to
be ^{very} near P. Sprungeliana) was not
found by Mr. Wright in Japan.

Potentilla fragiformis, Willd.;
Lehm. Pot. p. 163, t. 15, in Fl. Ross. Am.
1. p. 194, & Rev. Pot. p. 155; Ledeb. Fl. Ross. 2.
p. 59; Trautv. & Meyer. Fl. Ochot. p. 33; -

Laponica:

Var. stolonifera; floribus minoribus;
Carpellis eximie costato-reticulatis. — Itako-
dadi, on hill sides. (*Fragaria sterilis* Thunb. Fl. Jap. p. 219?)

This needs to be compared with
P. fragiformis, of Eastern Siberia and
the Aleutian Islands. The foliage, as
accords well with Schumann's figure;
but the flowering stems are shorter,
more slender, and lax, not exceeding the
radical leaves, and bearing several
flowers of only half an inch in diameter
when outspread. There are, also, conspic-
uous radical runners, like those of
P. canadensis, which have not been
noted in the species in question, nor
have ~~the~~ ^{its} achenia been described. In
our plant the achenia are ~~strongly~~
linear ^{with strong ribs on their sides,} and on the back more or less
rugose-reticulated.

Pentilla reptans, Linn.; Fl. Dan.
t. 1164; Linn. Rev. Bot. p. 183. (P. zulu,
Gray, in Perry, Exped. l.c.) ^{P. virgata Thunb.} Simoda; on
hill sides, and (~~an attenuated form~~)
a thinner-leaved form in wet ground.

Var.? foliis omnibus trifoliolatis.
Hakodadi: roadsides and along moun-
tain rivulets.

Fragaria (Duchesnea) Indica, Andr.
Bot. Rep. t. 475. Duchesnea fragarioides,
Smith. Simoda and Hakodadi.

Rubus Chamaemorus, Linn.; ~~Foss.~~
~~Lf.~~ Ledeb. Fl. Ross. 2. p. 71; Trautv. &
Meyer, l.c. p. 34. Cape Roman-
zoff. N. end of Jesso; in marshes
on table lands (in fruit), J. Small.
New to the Flora of Japan: occur-
ring there in about the same latitude
in which it occurs on the coast of
Maine, on the northeastern extremity

of the United States.

Rubus parvifolius, Linn.; Sieb.
& Zucc. Fam. Nat. Jap. p. 18. R.
triphyllus, Thunb. Jl. Jap. p. 215. Hill-
sides, Simoda and Hakodadi, flowers
purple.

Rubus palmatus, Thunb. Jl.
Jap. p. 217, & 2c. Jap. t. 36; Sieb. & Zucc.
Fam. Nat. Jap. p. 18. R. microphyllus,
Linn. f. Suppl. p. 263? (nom. pess.); Blume
Krijdv. p. 1110. R. pubinervis, Blume,
l.c., ex char. R. copstophyllus, Gray, in
Perry, Jap. Exped. 2. p. 311. In shaded
places, Simoda and Hakodadi (May-
June); in fruit, "Fruit lemon-yellow."

This species is truly polymorphous
in foliage. Our specimens are all 5-7-
clift, rarely with the middle lobe ^{much} pro-
longed, but generally of a roundish cir-
scription. But the smaller-leaved speci-
mens from Simoda are clearly the plant

figured by Thunberg. Had I possessed
the rare Leaves Plantarum Japoni-
carum at the time, I should have
recognized the plant I published in
Perry's Japan Expedition under the
name of R. corythyllus. The
At Hakodadi Mr. Small gathered
a form with larger ~~leaves~~ and less
dissected leaves, 3 or 4 inches in diameter,
and in shape resembling those of
Vitis cordifolia. — The name R. mi-
crophyllus, Lin. f. is inappropriate, and
may not belong to this species.

R. hydrastifolius, Gray, l. c., which
Mr. Wright did not meet with, may
be Thunberg's R. trifidus.

Rubus incisus, Thunb. Fl. Jap.
p. 217; Gray, l. c. p. 310. ^{R. nitifolius, Nit. & Rucc. leg.} Simoda;
procumbent, on hill sides.

A form with small and slightly
lobed leaves, whitish but glabrous
beneath; not unlikely the R. microphyllus,

of the younger Linnaeus. Another
form of this species was collected
^{in the islands between}
~~at the~~ the Ior Choo Islands and ~~in~~
~~the islands between~~ ^{these} that group and
Japan.

Rubus Wrightii (sp. nov.): ru-
ticosus, adscendens, aculeis brevibus
recurvis parce armatus; foliis mem-
branaceis ~~subrotundis~~ subcordato-rotun-
dis saepius triplicis (summis muc-
ro-ovato-lanceolatis subincisis) supra
praeter venas glabris subtus ramulis-
que molliter pubescentibus, lobis ovatis
sem ovato-lanceolatis duplicato-
serratis subincisis; stipulis angustis-
sime linearibus integerrimis; racemo
terminali 5-7-floro petiolo brevior; calyce
subvillosa, lobis triangulari-
ovatis ~~cuspidato-acuminatis~~ ^{breviter angulicupulatis} petalis do-
vatis ^{albis} patentibus brevioribus. -
Hakodadi; in shady woods. (In flower.)

81
Stems from 2 to 6 feet high, smooth
and slightly ^{or unarmed} armed in the specimens;
the shoots of the season more or less
pubescent, slender, bearing from 3 to
6 leaves and terminated by a short-
peduncled or a subsessile raceme of
5 to 7 flowers. Leaves all more or
less downy beneath with a fine and
soft pubescence, mostly roundish in
circumscription, the earlier ones 1 to
2 inches, the later ones 3 or 4 inches,
long, more or less cordate, 3-lobed and
with ~~a~~ narrow acute sinuses, the
lateral lobes sometimes obscurely 2-
lobed, in the smaller leaves roundish,
in the larger acuminate and with
the middle lobe exceeding the others. Pe-
ticles slender, mostly armed with ^{small} ~~scab~~
hooked prickles, some of which are often
found on the ribs of the leaves beneath.
Pedicels and calyx more or less toment-
ose or pubescent, the lobes of the latter
spreading, tomentose-canescent inside;

These are 3 or at length 4 lines long,
a little shorter than the spreading
petals. Fruit not seen. — The much
smaller and racemose flowers as well
as the pubescence distinguish this
from any form of *R. incisus*. It
should be compared with *R. cratagi-*
folius, Bunge, of Northern China.

Besides the species here mentioned,
I have only seen from Japan *R.*
rosafolia^{Smith}, and *R. Thunbergii*, Sieb. &
Rucc. (the latter not related to *R. Thunbergii*^{but to R. rosafolia}).
Thunberg's *R. hispida* and *R. occiden-*
talis do not appear to have been iden-
tified.

Rosa rugosa, Thunb. *Fl.*
Jap. p. 213; *Lindl. Monogr. Ros.* t.
19; *Sieb. & Rucc. Fl. Jap.* l. p. 66.
t. 28. *R. ferox*, *Laur. Ros.* t. 42;
Lindl. Bot. Rig. t. 420. Itakodadi; on
the sandy shore^(along low); and on ~~hills~~ moun-
tain sides on both shores of the Straits of

(a tall bush)

Sungar, J. Small.

The crimson petals of this ~~well~~ strongly marked species are, in these wild plants $1\frac{1}{2}$ or 2 inches in length.

Rosa acicularis, Lindl. Monogr. Ros. p. 44, t. 8; var *Gmelini*, Trautv. & Meyer, Fl. Ochot. p. 36. *R. Gmelini*, Brunze, in Ledeb. Fl. Alt.; Ledeb. Fl. Ross. 2. p. 75. Hill sides in thickets, northern end of Nippon, J. Small.

Rosa sempervirens, Linn.; var. *microphylla*, DC., Lindl. Simoda.

Rosa multiflora, Thunb. Fl. Jap. p. 214; Sieb. & Zucc. l. c. Hill sides, everywhere.

Eriobotrya japonica, Lindl.; Sieb. & Zucc. Fl. Jap. 1. p. 182, t. 97. *Mespilus japonica*, Thunb. Simoda; in fruit.

9

Rhaphirolepis Japonica, Sieb. &
Zucc. Fl. Jap. 1. p. 162, t. 85. Simoda;
in flower. Tanegashima; in fruit.

To this species apparently belongs
R.? integerrima, Hook. & Arn., from the
Bonin Islands (see Dr. Chor & Bonin
coll.) which ^{name} would have priority; ~~as to~~
but the leaves are often more or less
serrate. The lobes of the calyx very
greatly; ~~in this species (and in R.~~ (as
they also do in R. ^{indica} ~~subsa~~, which ^{will} may
include R. rubra and R. phaeostemon;
viz. from ovate-triangular to lanceolate-
subulate. Another, and the best name
for this species, appears to be Mespilus
Sieboldi, Blume, Bijdr. p. 1102 (1825),
referred to Photinia (P. Sieboldi) by Don,
Syst. 2. p. 602.

Photinia villosa, St. Prodr. 2. p.
631. Crataegus villosa, Thunb. Fl. Jap.
p. 204. C. laevis, Thunb. l.c.? Straus-
vainia digyna, Sieb. & Zucc. Fam.
nat. Jap. p. 21; Gray, in Perry, Exped.
2. p. 311. Mountain-sides, Hakodadi;
a large bush in shady places.

Although more or less villous when
young the leaves, ~~and~~ pedicels, and
calyx at length become nearly or quite
glabrous: so that the species includes
the two of Thunberg; and the plant is
a true Photinia, nearly allied to
some Himalayan ones in Hooker and
Thomson's collection. A fruiting spec-
imen of it, if I mistake not, was gathered
by Mr. Wright at Whampoa. The
peduncle and pedicels, said by Thunberg
to be "tuberculati", are conspicuously
beset, at least after flowering, with
yellowish oblong pustules or lenticel-
like projections. There are as com-
monly three styles as two. The ovary

at the time of flowering is almost free;
 the base of the ^{cells and of} erect scales is as high as
 the junction with the calyx. But ~~in~~
 during the subsequent growth, the cells
 are more developed downwards, so
 that in the water-urceolate or ovoid
 fruit the villous ^{convex} summit of the pericarp
 alone is free.

Pyrus spectabilis, Art.; Bot. Mag.
 t. 267; Sieb. & Zucc. l.c. P. baccata,
Thunb. Hakodadi; on hill sides,
 flowers white.

Pyrus communis, Lin. Hako-
dadi; cultivated.

Pyrus rivularis, Dougl. in Hook.
Jd. Bot. Am. l. p. 203. t. 68; Lidb. Jd. Pom.
 2. p. 99. Nippon, northern extremity;
 a single specimen collected by Alb. Brooke
Lieut. Brooke, in young fruit; appears
 to belong to this species.

Cydonia (^{Lincl.} Chaenomeles) Japonica,
Pers.; Sib. & Zucc., l.c. Pyrus
Japonica, Thunb.

Onagraceae.

Circaea alpina, Lincl. Cape
Orya, northern end of Jesso, in much
shaded places, J. Small.

Saxifragaceae, sensu latiore,

Rodgersia, Nov. Gen.

+ Calyx ~~5-partitus~~, tubo brevissimo
tubinato basi ovarii adnato, limbo
~~5-partito~~ petaloideo 5-partito, lobis
aestivatione valvatis ovatis ^{post anthesin} patentis-
simis persistentibus, Corolla nulla.
Stamina 10, perigynae, calycis lobis

opposita et alterna, ^{longiora} ~~isodem~~ ^{longiora}:
 filamenta subulata persistentia;
 antherae imatae, subdidymae, lon-
 gitudinaliter dehiscentes. Ovarium
 2-3-loculare, 2-3-styla; styli
 subulati stigmatibus crassis sub-
 capitis terminati. Ovula plurima,
 in placenta crassa axili retrosum
 imbricata, pendentia. Semina
 immatura scrobiformia, testa laxa
 utrinque ³⁻⁵⁻ producta. — Herba in-
 signis, ~~tripetalis~~ ³⁻⁵⁻ pedalis, caule valido e
 rhizomate horizontali per crasso
 erecto ³⁻⁵⁻ foliato, ^(radicalibus maximis longe petiolatis) foliis magnis
 alternis ^{palmatis} vel ^{peltatis} 5-
 sectis, summis trisectis seu trilobatis,
 foliolis cuneatis sessilibus apice
 inciso-lobatis margine undique acute
 serratis, petiolo basi scarioro-dilatato
 seu ~~adnatis~~ ^{adnatis} adnatis stipulato; cymis
~~bifurcatis~~ scorpioides plurimis in
 paniculam thyrsoideam nudam
 amplissimam collectis, floribus

Subsessilibus subsecundis ebracte-
atis luteo-albis.

Rodgersia podophylla. — Sha-
ded hillsides, Hakodadi, Com. Rodger,
Might; also on the opposite coast of
Hippou, J. Small. — Ripe fruit
alone is wanting to complete the history
of this very striking ~~plant~~ and
~~entirely new~~ plant, which, as the
type of an interesting ^{saxifrageous} new genus,
will appropriately bear the name of
the Commander of the Expedition, ^{Capt. Rodgers,} who
was also one of its discoverers. The
genera most related to it are *Astilbe*,
(of Japan, the Eastern Himalayas, the moun-
tains of Java, and with one species in
the Alleghenies of ~~the~~ the Northern
United States), and the little-known
Oresitrophe of Bunge, from the of the
northern part of China. The latter,
~~with a different habit~~, although apeta-

lous, like the present plant, is described as having a different habit and a one-celled ^{2-seeded} capsule; and neither the activation of the calyx nor the direction of the seeds are noted*. From Astilbe our plant is clearly distinguished by the rotately spreading ^{divisions of the} calyx, somewhat ampliate after anthesis, and valvate in activation, and the descending seeds. Moreover the inflorescence is cymose, not racemose, and destitute both of bracts and bractlets; the carpels are completely combined up to the base of the large, somewhat spreading styles; ^{the flowers are apparently all hermaphrodite,} and the foliage is peculiar.

Rootstock fully an inch in diameter, scaly; the sterile terminal bud sending up a single large leaf, in the manner of *Rodophyllum*, with its stout petiole, from one to two feet in length, ^{and} bearing an apparently peltate lamina, often two feet in diameter,

* Through Dr. Stokes's kindness, I am enabled to examine the flowers and young fruit of Mungie's *Oreistrispe rupifraga*. The relationship to the present genus is close; but the deeply ~~two-lobed~~ bivostrate ovary and capsule are one-celled, with two parietal placentae, and the seeds are horizontal, and, I believe, with the testa conformed to the nucleus.

divided into 5 cuneate leaflets. Flow-
er-bearing stems half an inch thick
in the larger specimens, from 2 to 4
feet high, terete, striate, nearly gla-
brous, bearing 3 or 4 alternate petiolate
leaves, and terminating in the ample,
~~lax and~~ compound or decomposed
and lax thyrses. Stipules, if they
may be so called, like those of ~~As-~~
~~tille~~ tille. Baseline leaves like the
radical ones, but successively smaller
and shorter petiolated; the uppermost
reduced to 3 leaflets of about 6
inches in length, or to a smaller
simply ~~and~~ 3-lobed leaf. Leaflets
membranaceous, glabrous on both
sides or nearly so, ~~scarcely~~ slightly
if at all petiolulate, pinnately-
veined from a strong midrib, and gen-
erally more or less triple-ribbed
about the middle, the veinlets ~~from~~
rather prominently reticulated beneath.

The leaflets are cuneate, with a tapering base, and a more or less 3-7-lobed or incised summit, the short lobes acuminate, and sharply doubly serrate. Inflorescence with the common peduncle a foot or more in length, rather hoary when young with a fine and dense purpuraceous-glandular pubescence: no bracts subtending the primary ~~and secondary~~ divisions (except an imperfect leaf at the lowest, occasionally), nor in any part of the cymes. The latter are commonly bifurcate, with or without ~~a distal~~ an alar flower, the rays elongating in a racemose manner with age, ~~more~~ and evidently scorpioid when young. Pedicels very short. Calyx opening early (the aestivation difficult to determine positively in the specimens, which have only spent buds at the ends of the ^{uniflorous} ~~parous~~ divisions of the cymes, but I think it is valvate).

when expanded and full-grown about 3 lines in diameter, yellowish-white, petaloid, ~~the divisions~~ 5-parted down to the adherent base; the divisions ovate, acute, one-nerved, or at length indistinctly 3-nerved, ~~marcescent~~ persistent; perhaps marcescent in fruit. Stamens 10, inserted where the calyx becomes free from the ovary, without any perceptible disk; the filaments when the flower opens, and when the anthers dehisce, shorter than the calyx (those ~~above~~ before the sepals longer than the others), but soon becoming twice or thrice their length, subulate, flat, persistent. Ovary at first almost half inferior, at length mostly superior; ovate, 2-celled or often 3-celled, scarcely 2-horned at the summit; styles ~~the~~ thickish, rather long, somewhat ~~de~~ spreading. Ovules very numerous in

each cell, pendulous and downwardly
incurved on the thick placenta,
anatriplexous. From the pretty well-
grown ovary it is evident that the
fruit is a capsule opening between
the ~~beaks~~ styles, and that
the seeds are siliiform, with a
loose testa prolonged beyond the nu-
cleus at both ends.

Stephanandra flexuosa, Sieb. & Zucc. in Act. Acad. Munac. 3, p. 740, t. 4, & in Lam. Bot. Jap. l.c. p. 82; Gray, l.c. p. 312. *Spiraea incisa*, Thunb. Fl. Jap. p. 213. Simoda, on shaded hillsides, Simoda.

A weak ^{and slender} diffuse or reclining, much branched shrub; in flower. - Williams & Morrow ~~collected~~ gathered a specimen in the fruiting state; but the full-grown seeds are empty (just as they are in all those of *Neillia* examined), so that I cannot verify Ruessner's figure, which represents a ^{pretty} copious albumen. It is through these two genera and *Geomega* (a new discovery in Eastern North America) more than through *Aspilbe* (which ^{imitates rather} has ~~more~~ the habit than the structure of *Aruncus*), that ^{the} Rosaceae and Saxifragaceae flow together. ^(notwithstanding that the seeds has some albumen) *Geomega* is certainly Rosaceous, and the analogue in ~~North~~ the United States

112
of *Kerria* and *Rhoddyppus* in
Japan. These three genera properly
belong to the *Salicaceae*. *Stephan-*
andra is allied to this group, but more
so to *Neillia*. Wherever systema-
tists may have to place these two
genera, it is ^{their nearest allies, if not the} manifest that the pre-
ponderance of their ^{technical} characters, are with
Rosaceae. *Neillia thyrsiflora* is ~~scarce~~
in rare instances decandrous and digynous,
and I think its petals are ^{like those of the} convolute
in aestivation, as in *Gillenia* and
Spiraea Aruncus, while those of *Ste-*
phanandra are imbricated.

112
Saxifraga sarmentosa, Linn. f.;
Thunb. Fl. Jap. p. 182. Shady hills,
Simoda.

Chrysosplenium ovalifolium (M.
Bieb.; Ledeb. Fl. Alt. 2, p. 115 ⁽¹⁸³⁰⁾ De. B. l.
t. 404); seu glabrum; caule basi
repente nudo, superne foliato (Spi-
thameo et ultra); foliis aut oppositis
aut alternis, ~~fol. m. crenatis petiolatis,~~
~~inferioribus et f. obovato-oviculatis, cune-~~
~~atisve pl. m. crenatis in petiolum atten-~~
~~uatis pl. m. crenatis, superioribus caulium~~
sterilem late ovalibus; cyma laxa
basi nuda, floribus plerisque ~~primariis~~
longiuscule pedicellatis; capsula maxima,
valvis oblongis calycem plus duplo super-
antibus; seminibus ovoidis nitidis his-
pidulis. — ~~C. macrocarpum~~. C. alternans,
Thunb. Fl. Jap. p. 182? C. macrocarpum,
Cham. in Linnaea, b. p. 558 (1831). C. Seda-
kovii, Trautv. Fl. Baic.-Dahur. 1. p.
464. Hakodadi, in mountain rivulets.

124
I have no doubt that these names
are rightly brought together. Ledebour
had a specimen, gathered by Salisbon in
flower only, and Trautvetter a depauperate
one from another ^{source} ~~source~~ which
might have been recognized in Ledebour's
figure by the "tuberula ovata, granis can-
nabi magnitudine" ~~perhaps~~ portrayed
on the ~~rootstock~~ creeping rhizoma.
Mr. Wright's specimens, being ^{prominently} ~~largely~~
in fruit, and some of them with opposite
others with alternate leaves on the
fertile stems, are at once to be identi-
fied with the *C. macrocarpum* of Cham-
isso (whose ^{appropriate} name is unfortunately a year
later than Ledebour's), who described from
a specimen ~~in~~ ~~the~~ collected long ago
by Gmelin (in Siberia, if Mulsar, -
in Rept. 2. p. 369 may be relied upon). The
species should ~~not~~ be compared with *C.*
trichospermum, ~~Edwards~~ Edgeworth, in Hook.
f. Præcur. Fl. Ind. of the Western Himal-
ayas. But it cannot be the same; for Dr.

Hooker would have noticed the long-exserted capsules, 4 or 5 lines in length ~~when~~ after dehiscence; and the seeds are ~~not~~ hardly larger than those of *C. oppositifolium*. They are beset with short and minute bristly hairs visible under a good lens. ~~Those of~~ (Specimens ^{of *C. trichospermum*,} since communicated by Dr. Hooker, are quite distinct, and much like *C. Nepalese*, except in the seeds.)

Chrysosplenium Kamtschaticum (Schlecht. Pat. in Herb. Willd.; Fisch. in *Lab. Prodr.* 4, p. 48); seminibus oblongis glaberrimis laevibus vel subcostatis magnis ($\frac{3}{4}$ lin. longis); cat. fere *C. oppositifolia* Japanensi, — *C. oppositifolium*, Gray, l. c. p. 311. — Hakodadi; with the preceding species.

The seeds of this plant are more than twice the size of those of *C. oppositifolium*, and narrowly oblong instead of short-ovoid; and the floral leaves are more toothed. The few specimens of what must be *C. Kamtschaticum* which Mr. Wright gathered at Petropav-

156
lovski, are too young for ripe seeds;
but the immature ones ~~seem~~ appear
likely to ~~enough~~ accord with those of
the Japan plant. *C. oppositifolium*
has ~~the~~ its seeds minutely roughened
under a lens: those of *C. glechonifolium*,
Nutt. (which is probably *C. Nepalense*,
Don) have them very smooth and glab-
rari: those of *C. Americanum* are oval
and hispid.

Hydrangea Hortensia, DC. var.
~~*Japonica* (*H. Japonica*, Sieb.)~~
acuminata (inter *H. Japonicum* et *H. acu-*
minatam, Sieb. & Zucc. *Fl. Jap.* 6. p. 106. 110,
t. 53, 56). Simoda.

This ~~and the greatly rounded~~ and several
of Siebold and Zuccarini's *Hydrangeas*
seem to be only varieties of one species.

Hydrangea paniculata, Sieb. & Zucc.
l.c. p. 115. t. 61. Simoda.

A single specimen: probably only

another

& variety of the preceding.

Hydrangea cordifolia, Sieb. & Zucc.
l.c. p. 113, t. 59. *H. bracteata*, Sieb. &
Zucc. l.c. t. 92. *H. petiolaris*, Sieb. & Zucc. l.c. t. 54?
Cape Romanoff;
north end of Jesso (a climbing plant;
flowers ~~small~~ all white), J. Small.

Dentzia scabra, Thunb. Fl. Jap. 1,
p. 185, t. 24; Sieb. & Zucc. Fl. Jap. 1, p. 20,
t. 7. Simoda. A much-spreading bush.

Dentzia crenata, Sieb. & Zucc.
l.c. p. 19, t. 6; Gray, in Perry, Jap. Exped.
p. 312. Simoda. This and the pre-
ceding retain their characteristic differ-
ences, both in the foliage and the
filaments. The ~~Himalayan analogue~~
~~represents~~ *D. Staminea* is the Himalayan
representative of *D. crenata*, but has
different calyx-teeth, and the leaves acute
at the base and downy beneath.

Crassulacea.

Sedum hybridum, Linn.; Fl. Prodr.,
3. p. 402; Ledeb. Fl. Ross., 2. p. 183; Trank.
Meyer, Fl. Ochot., p. 40. Itabodai,
in thick patches, on hills, and by the
sea-shore; also north coast of Kippou.

The mature capsules do not di-
verge horizontally, as by Ledebour they
are said to do in S. hybridum; otherwise
they resemble this species rather than
S. aizom.

107
Grossulacea.

Ribes laxiflorum, Pursh, Fl. 2, p.
731; Torr. & Gray, Fl. 1, p. 550. R. affine,
Dunf.; ~~in Hook. Fl.~~ Bongard; Ledeb.
Fl. Ross. 2, p. 200. R. prostratum, var.
^{shady ravines,}
Hook. Fl. Bor. Am. 1, p. 232. R. Cassi-
nya, northern end of Jessu; in fruit.

Umbelliferae.

Bupleurum multinerve, DC.
Prodr. 4, p. 130; Ledeb. Fl. Ross. 2, p. 264.
Hillsides, Hakodadi, J. Small.

Angelica japonica (sp. nov.);
~~Portacera~~; foliis ~~1-2 pin~~ bipinnatisec-
tis glabris, segmentis ovatis acumi-
natis argute serratis, ultimis saepe
trilobis, superioribus semilibus ~~et~~ basique
~~ala~~ ~~prolongata~~ integerrima decurrente;
umbella cauleque superne tomen-
tulosi; involuclis polyphyllis, folio-
lis parvis scariosis lanceolatis acumi-
natis; alis fructus latiusculis jugis-
que ~~obtusissimis~~ subsuberosis; vittis
commissuralibus 4. — Cape Orya,
on hillsides, J. Small.

A single, incomplete specimen,
without fruit, apparently of a large
plant, like ~~Archangelica~~ ~~atropurpurea~~. The flowers are said

to be white, and the peduncles sheathed.
The fruit we have from ~~Fort~~ Katama-
sima, one of the northern Loo Choo
Islands. The vitta and pericarp
are those of a true *Argilica*.

Archangelica Grisebii, DC.,
(*Callophorum Grisebii*, Ledeb. and
Physolophium saxatile, Turez., fide
Transtr. & Meyer, Fl. Ochot.), which was
gathered in Japan by Dr. Noron
and Williams, but not by Mr. Wright;
~~certainly~~ ~~includes~~ but the latter obtained fruiting
specimens in Behring's Straits. An
examination shows, what I have long
suspected, that *A. Grisebii* includes
A. peregrina, Nutt. in Torr. & Gray, Fl.,
~~thus ex~~ which inhabits both the western
and the eastern ~~shores~~ shores of the
northern part of North America. The
characters upon which the ~~genus~~ ^{genus}
Callophorum Ledeb. ^{or} and *Physolophi-*
um, Turez. ~~is~~ founded are variable
in degree, and of no great moment.

So that the plant surely might
not to be separated from *Archangelica*,
nor the latter, perhaps, from *Angelica*
itself. As to the number of vittae
they vary in *A. Gmelini*, but are
commonly ^{rather} few, often only one for
each interval and two on the commissure,
as stated in the *Flora Ochotensis*.

It is very uncertain what is the
plant mentioned as *Archangelica*
officinalis? in Perry's Japan Expedition,
the specimen being underdeveloped. ~~It~~
Perhaps it is a form of *Gymnocarpium*
leptophyllum.

Daucus Carota, Linn. Simoda;
in cultivated ground.

Heracleum lanatum, Michx.
Fl. 1. p. 166; Torr. & Gray, Fl. 1. p. 632;
Ledeb. l. c.; Gray, l. c. Hakodadi,
in ravines and shaded places.

The hairy form, same as the Oregon
plant.

Anthriscus sylvestris, Hoffm.; Fl.
Prov. 4. p. 223; Ledeb. Fl. Ross. 2. p. 346.
Hakodadi, in shady grounds.

~~A.~~ A. nemorosa is the species which
would have been expected from Japan, since
this alone is recorded from Eastern Siberia,
Kantschatka, and Schantar Id-
and in the Ochotsk Sea; but the oblong
fruits of the Japanese specimens,
(~~of~~ which are scanty in the collection)
are perfectly smooth ^{or with only the obscurest indications of ornamentation} and even ~~if~~ there
is, indeed, a minute ring of hairs at
the base of the fruit; but ~~if~~ this ~~these~~

also occurs
~~are evident traces~~ in specimens of
A. sylvestris from Western Europe. I
~~case~~ suppose that the two species
are not sufficiently distinct. Drs.
Morrow and Williams gathered the
same plant, in blossom only.

Osmorhiza longistylis, D.C. Prodr.
4, p. 432; Gray in Perry, Jap. Exped.
2, p. 312. *O. Japonica*, Sieb. & Zucc.
l.c. p. 95. Simoda and Hako-
dadi, in shaded places.

Araliacea.

Echinopax horrida ~~Decaisne~~ Decaisne & Planch. in Rev. Hort. 1854. Panax horrida Smith, in Ries, by l.; Hort. Fl. Borr.-An. 1. p. 273. t. 98; Ledeb. Fl. Ross. 2. p. 375. Mountains northeast of Hakodadi.

This is another plant characteristic of N. W. America, ~~which~~ found to extend into Japan. The petals ^{appear to be} ~~are~~ valvate in the bud.

Aralia (Ginseng) quinquefolia, Decaisne & Planch. l. c.; Gray, Man. Bot. c. 2. p. 160. Cape Pangar, Nippon, J. Small. Panax quinquefolius, Lin. (in flower)

Only one or two specimens were gathered of this, which is just the Ginseng of the Eastern North America.

Fatsia Japonica, Decaisne & Planch. l. c. Aralia Japonica, Thunb. Fl. Jap. p. 128; Sieb. & Zucc. l. c. p. 92.

Kiu-siu, on hillsides.

In this species the petals are truly valvate in aestivation; and the genus will probably merge in some other of DeCaisne's and Planchon's proposed ~~genera~~ genera, perhaps in *Oreopanax*. I ^{at present} am acquainted with their sketch of a new arrangement of *Araliaceae* only by a brief abstract in the Bull. Soc. Bot. France. 1. p. 196. ^{here} I suspect that too great stress is laid upon the aestivation of the corolla, which is of the valvate type, ~~in most~~ modified by ^{slight} overlapping in *Ginsengs* and other *Araliae*, ~~and the slight~~ and is not likely to furnish definite and practical characters in this order.

Parax spinosa, Linn. f. Suppl., p. 441. Alalia pentaphylla, Thunb. l. c. Simoda; on hillsides.

Subscandent, with greenish flowers. Petals probably valvate, ~~Style 2~~ Calyx-tube conspicuous. ~~Style 2~~ Styles 2, united at the base, free above and recurved or spreading. This is clearly the Parax spinosa of the younger Linnæus, and probably ^{the} Alalia pentaphylla of Thunberg, who does not mention the number of the styles. I have not seen specimens of A. pentaphylla, Sieb. & Zucc. whose description calls for larger peduncles than in ours, and five or six styles.

Hedera Helix, Linn.; Thunb. Fl. Jap. p. 102. Simoda: the variety with entire and rhombic ovate or oblong-ovate leaves, H. rhombica Sieb. & Zucc. l. c.

112
Paratropia Cantonensis, Hook. &
Arn. Bot. Beech. p. 189. Kiu Kiu,
on shady hill sides.

Helwingia ruscifolia, Willd. Spec.
4, p. 716; Sieb. & Zucc. Fl. Jap. 1, p. 164, t.
86. Ostrya japonica, Thunb. Fl.
Jap. p. 31, & Ic. Pl. Jap. t. 21. (Wooded
hill sides, Simoda; in fruit.

Cornaceae.

Aucuba japonica, Thunb. Fl. Jap.
p. 64; Sieb. & Zucc. ~~Fl. Jap.~~ Fam. Nat. Jap.
p. 86. Simoda.

Cornus brevipila, ^{Torr. & Gray, Fl. 1, p. 652;} Link.; Ledeb. Fl.
Ros. 2, p. 376. On mountains, near
Itakodadi, J. Small. In fruit, June 12,

Cornus Canadensis, Linn.; Torr.
 Gray, l. c.; Ledeb. l. c. Summit of
 mountains, N. E. of Hakodadi, June, 22;
 in flower.

This species does not extend into such
 frigid latitudes as *C. suecica*; but
 the two grow together ^{in the} southern
 part of Labrador and on the N. W.
 Coast. *C. canadensis*, which is wan-
 ting in Europe and Siberia, has long
 ago been met with in the Kurile
 Islands, and now Mr. Wright has
 detected ^{both} ~~it~~ in Japan. The specimens
 of *C. canadensis* ~~are~~ ^{are} similar
 in all points to ~~our~~ the plant of
 the United States.

Capsrifoliaceae.

Abelia serrata, Sieb. & Zucc. Fl. Jap. 1. p. 76. t. 34, & Flam. Nat. Fl. Jap. L. c. 2. p. 46. Simoda, A much-branched shrub. Flowers pink.

Diervilla (Weigela) Japonica. Weigela Japonica, Thunb. Fl. Jap. p. 90, t. 16. W. Coreaensis, Thunb. in Linn. Trans. 2. p. 331. (Szei Mung, Kampff. Ic. Sel. ed. Banks. t. 45.) Diervilla Japonica & Coreaensis, DC. Prodr. 4. p. 330. Weigela Japonica & Coreaensis, A. DC. in Mém. Sci. Nat. Ser. 2. 11. p. 240. Diervilla grandiflora & varicolor, Sieb. & Zucc. Fl. Jap. 1. p. 76. 74, t. 31, 33. D. (Weigela) rosea, Lindl. in Jour. Hort. Soc. 1. p. 65. t. 6. Simoda, on shaded hillsides: forms answering both to D. grandiflora & D. varicolor, - in blossom, and with fruit of the former year.
I was disposed to ^{regard} ~~consider~~ Weigela as a genus distinct from Diervilla,

on account of the ampliate corolla,
the limb of the calyx, deciduous from
the fruit, ^{the} coriaceous capsule,
and the reticulate winged
seeds; of which the ^{three} latter ^{distinctions} ~~character~~
~~the~~ were probably unknown to Mr.
Brown when he ~~referred~~ united ~~the~~ ^{u,}
these genera, and certainly to Alph.
DeCandolle when he ~~again~~ ~~ended~~
again separated them, on the occasion
of referring *Calyspyrum* of Brunge to
Neigela. I venture to refer ~~another~~
to this genus, or rather subgenus, *Nei-*
gela, another plant of N. W. Asia
recently proposed as a genus by the
Russian botanists, viz. the *Calyps-*
trostigma *Middendorffianum*, *Transv.*
S. Meyer, *Fl. Ochot.* p. 46. t. 25. The
stigma of this plant, as delineated in
the work above cited is not unlike what
the broadly peltate or cap-shaped stigma of
~~that of~~ the Japanese species would often
appear to be in dried specimens; the
villous ~~anthers~~ (and connivent?) anthers
alone seem peculiar; the unequal

122
union of the calyx-lobes is only
what Le Candolle describes as occurring
to some extent in the species of Northern
China (*Calysphyrum*, Brunze), and
is doubtless accidental; at least it
does not occur in some of the fruiting
specimens of *Diervilla Middendorffiana*
which Mr. Wright's assistant, J.
Small gathered on the shores of the
Ochotsk Sea. ~~The latter~~ In its
foliage, &c. the latter plant much
resembles *D. sessilifolia*, Buckley, of
the Northern Alleghany Mountains;
^{also} ~~and~~ the pericarp is equally thin; and
the limb of the calyx about to the same
degree persistent. That is, it remains in
both until the fruit is nearly ~~or quite~~
mature, and is then apt to fall away.
The seeds of the American species, although
wingless, are invested with a close cellular
pellicle of a structure similar to that
of the wing of the Asiatic species, ~~in~~
~~which~~ Moreover, the wing is sometimes

little developed in the Japanese species.

Diervilla (Weigela) floribunda,
D. floribunda + *D. hortensis*, Sieb. &
 Zucc. l.c. p. 70, 73, t. 29, 30, 32, 33. Hillsides, Hakodadi, J. Small.

This is distinguished from ~~the~~
D. Japonica by the more slender tube and shorter throat and limb of the corolla, and by the soft downy pubescence of the lower surface of the leaves, at least ~~of them~~ on the veins. Of these two Japanese species Siebold and Zuccarini have made four. Their *D. hortensis* being the same as their *D. floribunda*, they are probably wrong in supposing the former to have been introduced from China or Corea.

Lonicera Japonica, Thunb. Fl. Jap., 1. p. 89.
L. chinensis, Wats.; ib. Proc., 4. p. 333, Simoda and Tanegashima, climbing over trees.

124

Lonicera Morrowi (Gray in Perry,

Jap. Exped. 2. p. 313); molliter tomentosa-
pubescens; foliis oblongis; ^{brevis petiolatis} bracteis linearibus
vel spatulatis subfoliaceis ^{subglobosa} variegatis
creta glaberrima ~~2-4~~ ^{subglobosa} bis quater-
ve superantibus; cat. fere L. Hyloteii.
- Itakodadi and northern end of Shippon

A branching shrub, 2 to 7 feet high;
the flowers white, turning yellowish.
Leaves from one to two inches long, and
from half an inch to an inch wide.
Peduncles ~~are~~ not exceeding half the length
of the leaf, varying from three fourths to
one fourth of ~~the~~ an inch in length,
tomentose. Corolla rather larger than
in L. Hyloteum, equally deeply cleft
and more open; the filaments, style, &c.,
similar. - Numerous and fully-developed
specimens show that this plant is very
closely allied to L. Hyloteum, of Europe, &c.,
possibly only a form of that species. -

L. brachypoda Sw. would seem likely
to be a form of L. canulea. [Something very
different, however, is described as such by Hasskarl, in Bon-
plandia, 7, p. 170.

Niburnum Opulus, Linn.; Torr. & Gray, *Fl.* 2, p. 17; Ledeb. *Fl.* Ross. 2, p. 384. Stakodadi, on hills and mountains; also gathered by Small on the northern ~~and~~ coast of Nippon.

List the European plant, from which the North American forms do not essentially differ.

Niburnum plicatum, Thunb. in Linn. Trans. 2, p. 332; Sieb. & Zucc. *Fl.* Jap. 1, p. 81, t. 37; Gray, in Perry, *Jap. Exped.* ^(exactly syn. with *N. dentatum*) L.C. & *Fl.* Jap. p. 122. *N. laurantioides*, Michx. *Fl.* 1, p. 179. Stakodadi, and northern end of Nippon; ^{on shaded hillsides,} in young fruit.

"A much spreading bush!" Williams and Morrow ~~collected~~ gathered flowering specimens, which exactly agree with our own *N. laurantioides*. Those of the present collection are in young fruit, and the mostly orbiculate leaves (the largest nearly 6 inches in diameter)

generally want the short-acumina-
tion. I do not doubt their identity
with the ^{Chinese} American plant. It is
singular that Thunberg should have
mistaken this rather than one of
the following species for *N. dentatum*,
Linn. This, like several other
Niburnum, has manifest and genuine
stipules, adnate with the base of the
petiole; they ^{and their nature well exemplified} are very conspicuous in
the last and decausperate leaves of
the season. (*N. tomentosum* and
N. cuspidatum of Thunb. and of Siebold
& Zuccarini, I have not seen. The
former, I ~~should suspect~~ from Thunberg's
Thunberg's description and Zuccarini's
figure I ~~should suspect~~ ^{to} might be
a radiate state of *N. dilatatum*, Thunb.)

Niburnum dilatatum, Thunb.
Fl. Jap. p. 124; Sieb. & Zucc. Fam. Nat.
Jap. 2. p. 48. Hakodadi, on hill sides.
"A branching shrub, 2 to 4 feet high;
flowers white", Cymes ample, subsessile; the

117

Flowers much crowded on the divisions; the rays, peduncles, and young branchlets very densely and strongly villous. Leaves much like those of *N. Lantana*, only not at all cordate, & densely pubescent-tomentose beneath.

Viburnum dilatatum, Thunb., var. nudiusculum; cymis ramulis petiolisque pube brevi stellata cinereis et pilis simplicibus fl. in hirtis; foliis ovatis cuneatis ^{sub} rotundis ovatisque subtus praesertim ^{subvillosis vel} pubescentibus. — *N. erosum*, DC. Prodr. 4, p. 327; Sib. & Rucc. l.c.; Gray, l.c., viz Thunb. *Simoda*, ~~several~~

"Shrub 3 to 10 feet high; flowers white". Various* forms were gathered, some clearly passing into *N. dilatatum*; others approaching the next, ~~which, from~~ ~~Thunberg's description~~

Viburnum erosum, Thunb., Fl.
 Gap. p. 124, N. phlebotrichum, Sib.
 & Rucc.?, near 'Takodadi'; on hills and
 mountains.

Perhaps a form of the polymor-
 phous N. dilatatum, inhabiting more
 shady places. It is known by its
 thin and membranaceous leaves, which
 are more coarsely toothed and usually
 conspicuously acuminate; ~~and~~ by its
~~small~~ slender peduncles (fully twice
 the length of the petioles; the smaller
 and simpler cymes; and the general
 smoothness. The whole plant is
 glabrous except that the peduncle
 when young, the petioles, and the ^{neopse}
 veins on the lower face of the leaves
 are ~~pubescent with simple~~ beset with
 rather sparse, simple, weak and slender,
 decumbent hairs. Leaves from 2 to 5
 inches long, broadly ovate or rhomboidal,
 roundish or rarely subcordate at the base,
 the veins &c. much as in N. dentatum, to

124
which the species is considerably related.
- This, I think, ^{really} must be Thunberg's
V. erosum, which he describes as
having thin and glabrous ^{acuminate} leaves, and
one form a long acuminata. The
petioles however, are not "tomentose",
but pilose.

Viburnum odoratissimum, Ker. Bot.
Mag. t. 456; Stork. f. & Thun., in Jour. Linn. Soc.
2. p. 177; var. *kin-siu*; in fruit
only

cf. ...

See if this is ...
in Walp. *Bot. Bot.*, 5. p. 101.

Sambucus racemosa, Linn.; Ledeb.
Fl. Ross. 2. p. 383. S. racemosa var,
pubens, Franch. & Meyer, Fl. Ochot. p. 46.
S. pubens, (Michx), Gray in Perry, Exped.
l. c. Hakodadi, and northern end of
Nippon.

The specimens are intermediate
between the American S. pubens, and
the European and Siberian S. racemosa,
there being only a slight pubescence;
but the leaflets are rather broader than
^{There is a similar form in California.}
in either. Doubtless all are forms of
one species. The stipules are ~~sometimes~~
either wart-like, or thickish and oblong
processes, or sometimes linear appendages.

Rubiaceae

Aspenula odorata, Linn.; Lidb. Fl. Ross. 2. p. 400; Gray, in Perry's^{Jap.} Exped. l.c.
Hakodadi; on shaded hill sides.

~~Apparently~~ indigenous; but exactly the European plant.

Galium verum, Linn., var. lasiocarpum, Lidb. Fl. Ross. 2. p. 415. G. Ruthenicum, Widd. Hillsides; on the southwestern coast of Jesso, J. Small.

The flowers are recorded as yellow. Thunberg's ~~has~~ G. verum, from Japan is said to ~~have~~ be white-flowered, and has not since been detected. The hairy-fruited form of the species extends from the Okhotsk Sea to Southern Russia.

Galium triflorum, Michx. Fl. 1. p. 80; Jorr. & Gray, Fl. 2. p. 23; Lidb. l.c. p. 413. G. macedons, Wahl. Hakodadi; in shady woods. ~~Exact~~

Exactly the North American, and also the European Scandinavian and Russian

Plant. Dr. Hooker's *Stim alayan*
Plant slightly differs. The species ~~has~~
is not recorded from any station in
Russian Asia; but it ranges ^{quite} across the
American Continent.

Galium trachyspermum, Gray,
in Perry. Jap. Exped. 2. p. 313. *G. rotun-*
dum (*rotundifolium*), Thunb. Fl. Jap. p.
59, ex char.; Hook. & Arn. Bot. Beech. p. 265;
Singoda;
~~*Stakodadi;*~~ on grassy hills ("Flowers green-
ish". Island of Aganhu "Flowers white".

The specimens from *Stakodadi*,
just coming into blossom, are a foot
high, with nearly simple stems, and
the leaves half an inch or more in length,
the lower round-oval, the upper oval-
oblong; they are more ^{or hispid} hirsute on the
margin and midrib ~~thence~~ in Williams
and Morris's plant, and with some hairs
on the face of the leaf. From Aganhu
the specimens (like those from *Loo Choo*)

are smaller in all their parts (leaves
4 or 5 times long) ^{branching} and the flowers very
copious, the clusters ^{somewhat} panicked. Corolla
~~very~~ small, glabrous; the lobes broadly
ovate and obtuse. Ovaries granulate-
~~scabrous~~ setulose. Fruit didymous,
rough-granular. — This must be Thun-
berg's *G. rotundum* (*rotundifolium*); and the
following must be mere varieties:—

Var. β . *gracile*; foliis lanceolatis;
pedicellis gracilibus; floribus parvis. —
Shaded hillsides, Simoda.

Var. γ . *setuliflorum*; foliis ovalibus
oblongis lanceolatisque; corolla ~~et sepius~~
extus parce hispida. — With the pre-
ceding; also Agenhu.

Galium Aparine, Linn.; var.
Vaillantii, Koch, *Fl. Germ.*, ed. 2, p. 363;
Ledeb. l.c. *G. uliginosum*, Thunb. *Fl. Jap.*
p. 58. *G. strigosum*, Thunb. in *Act. Ups.*
7, p. 141; *Sieb. & Zucc. l.c.* *G. pauciflo-*
rum, Munge, *Enum. Pl. Chin. Bor.* p. 35.

Island of Agunhu.

A remarkably small form: clearly the same as the "*G. parviflorum*, Bunge" of Dr. Thomson's collection in Tibet, and pretty clearly only a variety of *G. Sparine*.

Levissa foetida, Comm.; Lab. Prodr. 4. p. 575. Simoda; cult. & spontaneous, in cultivated places.

Dammacanthus Indicus, Gortn. 3. p. 18. t. 182. Lab. Prodr. 4. p. 473. *D. Indicus* & *D. major*, Sib. & Rucc. l.c. Simoda; in thick woods.

Oldenlandia paniculata, Linna. Spec. ed. 2. p. 1667; Miq. Fl. Ind. Bat. 2. p. 191. *Hedyotis racemosa*, Lam. Ill. t. 62. f. 2; Night. 2. c. Pl. Ind. Or. t. 312. Varg. crassifolia, O. crassifolia, Booth in Lab. Prodr. 4. p. 437. Archi rock, off ~~the~~ the south end of Kia-siu.

A dwarf, fleshy, maritime form of the species: in fruit. Records with specimens

from the Feejee Islands; more fleshy than specimens
from Luzon.

Paderia foetida, Linn. Mant. p. 52;
Thunb. Fl. Jap. p. 107. Tanegashima;
in fruit.

Valerianaceae

Valeriana divica, Linn.; Ledeb.
Fl. Ross. 2, p. 436. Nippon, near
Cape Sangar; on the sides of a mountain,
I. Smally.
A large form of the species, two
feet or more in height. In the
same species belongs what I named
V. Tripteris, in Perry's Japan Expedition;
and ~~also~~ N. sylvatica of North America
is not specifically different.

^{the} specimen from Japan. ^{was} ~~misleading~~ before because
called Aster.

Compositae.

Heteropappus hispidus, Less, Syn.
Compos., p. 189; Ob. Prodr. 5, p. 297,
excl. syn. Kaempfer. Aster hispidus,
Thunb. Fl. Jap., p. 315, excl. syn. Kaempfer.
Calimeris hispida, Nees, Bot., p. 227.
Heteropappus rigens, Sieb. & Zucc., Fam.
Nat. Pl. Jap. 2, p. 60, ex char. Tanegashima.
Rays purple.

Upon comparison of our specimens
with Thunberg's description, and
Lessing's ~~also, as published~~ notes upon
Thunberg's plant (published by Nees,
l.c.) ~~I have~~ little doubt remains that
they belong to Aster hispidus, Thunb.
That species has accordingly been mis-
taken by Zuccarini, ~~and then~~ for
a plant ^(not seen by me) which he has identified
with the Siberian Calimeris incisa,
and which he remarks is not at all
hispid. To this ^{conclusion} he was probably
misled by the synonyme which

19
Thunberg cited from Kämpfer's
Annotates, and by the figure, named
Aster hispidus, in Banks' Lecnes del.
Kämpfer, t. 29. ~~That plant certainly~~
~~is not~~ This figure certainly belongs to
a plant very different from Thunberg's, -
I think to an Aster which Dr. Mor-
row gathered ^{fragments of} at Simoda, B. and which
I doubtfully referred to Doellingeria
scabra, in Perry's Expedition. As Dr.
Williams gathered the same thing at
Canton, I suppose it is the "Doellingeria
n. sp." Hook. & Arn. Bot. Beech., p. 195.,
but it can hardly be D. trichocarpa, B.
If this view be confirmed the species ~~may~~
should be named Aster Kämpferi. -
Our present plant is manifestly Reicard-
ini's Aster pappus rigens, and possibly
his A. subserratus also. Although the
difference here is well marked between
coroniform pappus of the ray and the
setose pappus of the disk, yet I suppose

Heteropappus will at length subside
into a section of Calimeris.

Erigeron (Stenactis) Thunbergii,
Dula Rubia, Thunb. Fl. Jap. 318, Aster
Japonicus, Less. in Mus Ast. p. 33; Gray,
^{Erigeron pulchellum? Gray, l.c.}
in Perry, Exped. 2. p. 374. Simoda; on
hill sides. (Rays light purple.)

Var. glabratum; caule validiore
breviore apice nudo glanduloso; foli-
is glabris (margin ~~haud~~ raro villoso-
ciliatis); involucri multo minus hirsuto.
Cape Sirigi Saki, Nippon, J. Small
(Rays purple.)

The collection of well developed
specimens enables me to refer Lessing's
Aster Japonicus to the group which
already contains his Aster Californicus, viz. to the Stenactis section
of Erigeron. It is, indeed, very closely
related to the last named plant, the
Erigeron glaucum of Ker, and has a
similar setulose exterior pappus. It

is, however, a more slender plant; the heads and flowers smaller; the leaves not fleshy, and abruptly cuspidate or apiculate. The variety, found by Mr. Small at a widely different station, has the same structure of the flowers, &c.; and but has a less villous involucre or minute involucre and wholly glabrous leaves. But, in one or two cases distinct traces of the villous ciliation occur,

Solidago ^{Virgaurea} ~~virgaurea~~ Virga-Aurea,
Linn.; Thunb. Fl. Jap. p. 317. (Vide
Hong Kong Coll.); var. leiocarpa. Tan-
gasima, and southern extremity of
Kia-siu.

A great variety of specimens, from these stations and from the Looboo Islands, exactly resemble common European forms of the ~~sp.~~ Virgaurea, except that the ovaries and the achenia

are perfectly glabrous. The latter are
several-striate when mature. In
North ~~South~~ America, *S. Virgaurea* is
altogether a high northern or mountain
plant. In Europe it descends to the
level of the sea as far south as the
Mediterranean; but its most southern
range is in the China-Japanese region.

Oryza Japonica, Less. Syn.
Comp. p. 204; DC. Prodr. 5, p. 382.
Erigeron Japonicum, Thunb. Fl. Jap.
p. 312. Simoda; on banks.

"Flowers purplish"; the central
ones infertile. The pappus is whitish
and the leaves are spatulate rather than obovate;
otherwise the specimens accord well with
the characters. The same species was
gathered at the Northern Socho Island,
and ^{a form of it} at Hong Kong.

Pyrethrum sinense, Sabine in
Hort. Trans. 4. p. 330, t. 14; DC. Prodr. 6.
p. 62; Sieb. & Zucc. l.c. p. 62, Tan-
gasima. on hillsides, & Kin-siu.

Truly wild states of the species,
low, with the leaves canescent
beneath, Rays white. Pappus
obovate.

Gnaphalium involucreatum, Forst.
Prodr. p. 55

Emilia sonchifolia, DC. Prodr. 6
p. 302. Island of Kin-siu.

Ligularia Kamppferi, Sieb. & Zucc.
Fl. Jap. 1. p. 77, t. 35. Lumilago Japonica,
Thunb. Fl. Jap. p. 313. Kin-siu and
Tangasima.

Porphyrillum japonicum, DC. Prodr.
5. p. 650; Sieb. & Zucc. Fl. Jap. p. 161, t. 84. Mar
Kin-siu.

Erythrochate dentata (Sp. nov.);
 foliis caulinis late cordatis crenato-
 dentatis, petiolo alato basi dila-
 tata amplexicauli; involucri breviter
 campanulato. — Island of Nippon,
Mr. Brooke.

Only a single and incomplete
 specimen was collected, consisting of
 the inflorescence with three capitula,
 the lower subtended by a small leaf;
 also a portion of the stem with a
~~single~~ cauline leaf. The latter is
 5 inches in diameter, dilated and some-
 what angulately cordate, the sinus
 deep, the margin sharply crenate-
 toothed. The petiole is narrowly winged
 above, but the lower half widely so,
 and auriculate-clasping. Inflorescence
 glandular-pubescent, as in *E. palmati-
 fida*; the heads similar, but rather
 shorter or thicker, "Flowers purple,"
 also similar to those of the original species.
 Appendages of the style of the *Spermaph-*

disk flowers long, semiterete, of
 equal thickness throughout, obtusish,
~~uniformly~~ and rather strongly
 hispid for the whole length on the
 outside; no conical or other ap-
 pendage. Achenea linear, angled,
 striate, glabrous. Pappus of copious,
 pluriserial, ~~unequal~~,
 rather rigid, strongly scabrous capillary
 bristles, as long as the disk corollas,
 ferrugineous. A ~~strict~~ ^{close} congener
 of *E. palmatifida*, Sieb. & Zucc. (*Arnica*
Japonica Thunb.).

Cacalia hastata, Linn.; DC.
Prod. b. p. 327; Ledeb. Fl. Ross. 2. p.
626; Trautv. & Meyer, Fl. Ochot. p. 56,
Cape Gorya, northern end of Jesso, J.
Small.

The pubescent variety, "Plant 6 feet
 high". New to the Japan flora; but
 widely diffused on the adjacent coast,
 from the Okotsk region to Behring's

Arctic, and through Siberia to European Russia.

Senecio palmatus, Pall. H. 3. p. 321; Ledeb. Fl. Ross. 2. p. 636; Trautv. & Meyer, Fl. Ochot. l. c. *S. can-
nabifolius*, Less. in Linnaea, b. p. 242; DC. Prodr.,
b. p. 349. *Helidago foliis palmatis*, Gmel. Fl. Sibir. 2. p. 170. t. 75. *Arnica palmata*,
Thunb. Fl. Jap. p. 319, ex char. ^{Cideroque} ~~Cideroque~~
Senecio palmatus (Less.?). DC. l. c. p. 433.
Cape Dorya, on hill sides, J. Small.
Leaves either palmately three-parted,
or most of them pinnately 5-7-parted,
gryine dense.

Senecio Pseudo-Arnica, Less. in Linnaea, b. p. 240; Hook. Fl. Bor.-Am. t. 113; Ledeb. l. c. p. 642; Trautv. & Meyer, l. c. Cape Dorya? on the sea-shore.

1-4-4

Cissium (Eriolepis) pectinellum
(sp. nov.): Caule stricto hirtello apice
arachnoideo; foliis supra scabridis
viridibus subtus albo-lanatis pro-
funde pinnatifidis, supremis basi
angusta spinulifera sessilibus, ceteris
in alas ^{angustissimas} lineasve pectinationem setosas
longe decurrentibus, lobis lanceolatis
sensim acuminatis mucrone vix pun-
gente fasciculatis; capitulis ²⁻³ ~~subglobosis~~
breve pedunculatis subglobosis; invo-
lucris arachnoideis squamis e basi
lanceolata subulato-acuminatissimis
~~sub~~ ^{inter} nervibus recurvato-patentibus.
— Hillsides on the ^{or the north side of} west coast of Iesso?
J. Small.

Stem 2 or 3 feet high, simple,
bearing two or three slightly bracteate
heads. These are about half the
size of those of *C. eriophorum*; the
involucre almost as woolly; but the
scales are ^{more caudate, and} weaker, ~~not~~ spiniferous.
~~Leaves deep~~ Flowers purple. Leaves

Helictes multicaulis Dr. Presl.
b. p. 570, & in Allen. Dr. Sch. 4. 68.
Gray in Gray, Alp. Exped. p. 314.

14
deeply pinnatifid or pinnately
parted; ^{separated by very narrow sinuses,} the lateral lobes, nearly entire,
minutely spinulose-ciliate; the ter-
minal one elongated, gradually acu-
minate. All but the uppermost leaves
are decurrent, on the stem in the
form of very ^{or} narrow wings (2 or 3
inches long) which are sometimes ~~re-~~
~~duced to a slightly~~ almost obsolete,
but always beset with a series of
stout bristles or slender spinules.
Only two specimens were gathered
of this apparently very distinct species.
I have not seen *C. lappaceum*, with
which this should be compared. ~~From~~
I should suppose this to be Thun-
berg's *Cordus eriophorus*, if DeCan-
dolle had not described his *Cirsium*
Japonicum upon an authentic
specimen of it, in Desessent's her-
barium.

Cirsium Kantschaticum, Ledeb.
in DC. Prodr. b. p. 644, & Fl. Ross. 2. p.
737. ~~Var.~~ (Smel. Fl. Sibir. 2. t. 24.)
Var. foliis nunquam decurrentibus,
— West coast ^{at Supejunt,} of Lesso, J. Small, —
Var. foliis caulinis omnibus decur-
rentibus. — Itakodadi; on hillsides.

Cirsium Japonicum, DC. Prodr.
b. p. 640; Gray, l. c. Hillsides, Si-
moda, J. Small. Also a taller, thin-
ner-leaved, and more pubescent variety,
probably growing in shade.

This is likely to be DeCandolle's
C. Japonicum, but hardly Thun-
berg's *Candarus eriospermus*. It belongs
to the section *Orotrophe*. The scales
of the involucre are appressed, and
areose only when young, the
outer ones only spinulose-tipped. Lower
part of the stem and midrib of the
leaves villous with slender, and jointed
hairs, and sometimes there are similar, but stouter
hairs on the upper face of the leaves.

147

Lamproloma parviflora (sp. nov.);
glabra vel glabriuscula; caulibus
e radice annua debilibus diffusis;
foliis fere omnibus lyrato-pinnatifidis;
capitulis laxo paniculatis (2 lin longis).
~~ligulis~~ 14-20-floris; involucri squamis
fructiferis planis acumineatis; acheniis
breviter oblongis subcompressis, mar-
ginibus acutis hispidulo-scabris. —
Simoda, on hill sides among bushes.
Hakodadi, in yards among trees.

Stems from 6 to 20 inches long,
glabrous, as also the slender pedicels,
involucre, &c. Leaves thin, lyrate
with mostly obtuse, oval or oblong lobes,
some of the uppermost ^{leaves} oval or roundish
and merely angulate, the lower often
sparsely pilose on the midrib and
veins beneath. Involucre hardly 2 lines
in flower, in fruit a little ^{the scales about 8,} larger ^{if} thin
and membranaceous, oblong, becoming
acuminate, lightly nerved, not at all
keeled, the calyculate scales ^{few and} very short.

Flowers yellow; the ligules not much exserted, twice the length of their tubuli. Receptacle flat, naked. Achenia not caducous, a little shorter than the involucre, a line and a half in length, elliptical, considerably compressed, minutely scabrous and marked with 3 or 4 rather strong ribs on each face, the margins acute and minutely hispidulous; the apex truncate, destitute of pappus. — This must be a *Lappula*, and a wholly undescribed one.

Picris hieracifolia, Linn.; *Fl. Prot.* 7, p. 128; Gray in *Perry's* ^{Exp.} *Exped.* 2, p. 314, *P. Japonica*, Thunb. *Fl. Jap.* p. 299; *Sieb. & Zucc. l.c.*; *Ledeb. Fl. Ross.* 2, p. 800, *P. flexuosa*, Thunb. in *Linn. Trans.* 2, p. 340, *P. Daurica*, Fisch.; *Sb. l.c.* *P. Kamtschatica*, *Ledeb. Fl. Alt.* 4, p. 159, *Itakodadi* and *Simoda*, on hillsides. The abundant and complete specimens

149
accord well with the European ~~speci-~~
~~mens~~ plant, especially with Swe-
dish specimens. The achenia are
just the same.

Taraxacum dens-leonis, Desf.
Simoda and Hakodadi, the ordinary
Dandelion.

Ixeris stolonifera (sp. nov.); ~~pernula~~,
~~glaberrima~~, subglauca; ~~foliis~~ stolonibus
filiformibus prospertibus foliatis; foliis
obtusatis late ovalibusve basi obtusis vel
subcordatis plerumque integerrimis petio-
lo filiformi brevioribus; pedunculis ~~elon-~~
gatis scapisve monocephalis nudis;
involucro 15-20-floro; acheniis ~~breviter~~
ovali-oblongis rostro suo brevioribus,
costis crassis levibus. — Variat, foliis (3-
12 lin. longis) nunc parce denticulatis,
nunc basi subhastato-bidentatis; scapo
digitati ad spithameam; floribus flavis.
— On hillsides, sandbanks, &c. + Hako-
dadi, Simoda, and the southern extremity

152
of Kiu-siu.

This is doubtless in part the
Yungia pygmaea of Ledebour &
~~F.H. Ross, 2. p.~~ Zuccarni (in Jam.
Nat. Fl. Jap. l.c. p. 70); but I think
it is not a separate form of Thun-
berg's *Premna debilis*, as the nume-
rous from various ~~states~~ and widely
separated stations hold their characters
perfectly. Certainly it is not a
^{not even a} congener, ^(*Premna*) ~~(*Premna*)~~
form of Ledebour's *Crepis pygmaea* (*Crepis*
mana, Richards.) as he supposed;
which plant has a different habit,
smaller heads with shorter ligules,
and ^{slender} ~~terete~~, striate, ~~achene~~ beakless
achene, and is probably best placed in
Crepis. The present and the next
following species (however it may be
with the succeeding ones) ~~are~~ undoubtedly
belong to *Ixeris*, as Ledebour and
Zuccarni would have seen had they
^{possessed} the fruit, which is now for

The first time made known. The
 acheneum is about a line long, with
 about 10 very strong and salient, thick
 and acute, ~~entirely~~ smooth ribs; its sum-
 mit tapers rather suddenly into a fili-
 form beak of nearly a line and a half
 in length, its apex dilated to bear the
 soft and white, copious but ~~un~~iserial
 pappus. Involucre about $4\frac{1}{2}$ lines long,
 loosely calyculate with a few small
 subulate scales. Receptacle flat, naked.
 Ligules 5 or 6 lines ^{then tubercles glabrous} long. Leaves all sub-
 radical or on the slender ~~stolons~~,
 runners, thin, almost ~~always~~ entire
 or nearly so; the petioles of the larger
 ones often one or two inches in length,
 and fully twice the length of the blade,
 especially on the runners.

112
Oxeris debilis: caulibus gracilibus
laxis basi stoloniferis superne longe
nudis 1-5-cephalis; foliis radicalibus
et stolonum obovato-spathulatis oblongis
~~spat~~ lanceolatisve in petiolum longum
attenuatis integerrimis ^{vel} denticulatis
nunc pinnatifido-dentatis, caulinis
subnullis paucisve; involucri 20-25-
floro; acheniis ^{breviter} oblongis alato-costatis
rostro suo aequilongis, cortis levibus.
Prenanthes debilis, Thunb. Fl. Jap. p.
300, & Le. Pl. Jap. t. 39. (Mungia?
debilis, DC. Prodr. 7. p. 194; Gray, l.c.,
G. pygmaea, Ledeb. & Ruce, Trans. Nat.
Fl. Jap. l.c. pro parte et syn. Thunb.-
Takodadi, Simoda, &c., on hillsides
among grass and on sandy shores.

A span to a foot high, with
the habit and structure of the foregoing,
but larger and apparently less
stoloniferous. Leaves from one to 3
or even 5 inches long, the base taper-
ing into a slender petiole, which on

The stolon is from one to 4 inches in length; the cauline none or few, the uppermost ^{generally} sessile and small. Scape or long naked peduncle generally bearing only one or two heads. Involucre half an inch long; ^{the calyculate scales ovate or oblong.} the receptacle flat, naked. Flowers yellow; ligules half an inch long; the tube glabrous. Achenia about 2 lines long, and with a slender beak of the same length, ^{having bearing a dilated summit} (thick) the 10 smooth ribs very salient and ring-like. Pappus white, copious, hardly in a single series. — Thunberg's figure (overlooked by DeCandolle) is a good representation of the plant, but the leaves are by no means always entire. Probably *Poa annua* humilis, Thunb., is a form of this species with lyrate leaves. These plants are probably perennials.

Ma

Physis debilis: Phumilis (opritta)

Ixeris (Chorisis) repens; cau-
libus numifusis longe repentibus;
foliis petiolo brevioribus trilobis tripar-
titis trisectisve. nunc pe dato-5-actis
raro integris, sequentis obovatis vel
rotundatis obsolete denticulatis vel sub-
sinuatis; pedunculis oppositi foliis pe-
tiolum superantibus 1-3-cephalis parce
bracteatis ^{(aut} ~~see~~ ^{Ligularis} ~~numifoliatis~~ ^{floribus flavis}; involucri
20-30-floro; achenis oblongis crasse-
10-costatis rostro quadruplo longi-
oribus, costis acutiusculis acie minu-
tissime scabriusculis; pappo pluriseriali.
— Prenanthes repens, Lin. ~~Am.~~
Anoen. Acad. 2, p. 360, t. 4. Chorisma
repens, Don in Edinb. Phil. Jour.
— Chorisis repens, DC. Prodr.
7, p. 178; Gray in Perry, Sup. Exped. 2,
p. 315. Nabalis repens, Ledeb. Fl. Ross.
2, p. 840. Hakodadi; creeping in the
sand on the sea shore.

These specimens, and those from

the Loo Choo Islands, furnish ripe
achenia of this interesting plant,
as well as ~~flowers~~ good flowers.
The latter prove to be yellow; and so,
indeed, they were described by Linnaeus;
surely Don had no good reason
for calling them "pale blue", nor
Beccard, who has merely copied
Don. Dropping the qualifying word,
(which are not flattened at maturity)
the achenia are just those of *Ixeris*,
and so is the beak, although shorter
than usual in that genus; it has
the same dilated disk at its summit,
bearing the pappus. The latter is
similar to that of *I. debilis*, but
more copious. I do not hesitate on
this account to refer the plant to *Ix-*
eris. The less perfect specimens
gathered by Williams and Morrow, did
not enable me to correct the ~~specimen~~
mistake about the color of the flowers;
nor did they furnish ripe achenia.
It is singular that a plant which inhabits

The shores of Japan, Su Cho, and
Hongkong, as well as of Kamtschatka,
should have so long escaped redis-
covery.

Ixeris ramosissima; glauces-
cens; caule paniculato ramoso folioso;
^{foliis} oblongis, ^{acutis} dentatis muc runcinatis,
in firmis in petiolum marginatum
large attenuatis, superioribus ~~aur~~
basi auriculata vel hastata amplex-
icaulis; capitulis numerosis corym-
bosis breviter pedicellatis 10-12-floris;
corollis flavis; acheniis pyriformibus
in rostrum breve ^{longi} vel ^{prominulis} ~~longi~~ ~~tricus~~ culum
attenuatis, costis ^{prominulis} obtusis scabiusculis;
pappo uniseriati. — Prenanthes hastata,
Thunb. Fl. Jap., p. 301, ex char. —
Brachyrampnus? ramosissimus,
Benth., in Lord. Jour. Bot., 1. p. 489, for-
ma runcinata. — Kagorima Bay,

Kiu-siu; on sandy banks.

Stems one or two feet high,
branching from an apparently per-
ennial root. ^{leaves to the top, whole plant very glabrous} Leaves 2 or 3 inches
long, the lowest obovate or spatulate, the
middle ones spatulate and with
a more or less dilated auriculate-clas-
ping base; the upper smaller and
mostly broadest at the cordate-clasping
base, all sharply dentate with salient
teeth, the spaces between the teeth strongly
repand or sinuate, or rarely sinuate-pin-
natifid. Heads numerous in a com-
pact corymb or panicle, larger than the
filiform pappi. Involucre $4\frac{1}{2}$ lines
long, cylindrical, narrow, of 7 or 8 linear
scales, and a few minute bractlets.
Receptacle flat, naked. ^{Tube corolla glabrous,} Achene slender,
about a line and a half long, ^{tapering gradually,} the outer ones
~~with~~ into a short, the inner into a
larger beak, the summit of which is
dilated, as in the genus. Pappus bright
white, nearly uniserial. — This is

~~of the same name~~

manifestly Thunberg's *Prenanthes*
hastata, but the leaves are not
~~very~~ ~~dec~~ strikingly hastate. As Mr.
Benthams *Brachyrhynchus*? *ramosissimus*
is pretty clearly a runci-
nate variety of the same species, the
latter specific name may be preferred.
The achenia are ~~the~~ similar to those
of *Ixeris vericolor*, DB.; though not
quite the same as those of genuine *Ixeris*,
yet the plant may well be referred
to that genus, rather than to *Barck-*
hausia.

Ixeris (*Ixeridium*: capitulum 5-
10-florum; pappus sordescent) Thunber-
gii: caulibus basi vix stoloniferis
foliis superne parce ramosis;
foliis oblongis, ^{membranaceis} apice cuspidatis, radi-
calibus longe petiolatis plerisque
laciniato-dentatis sublobatisve, cau-
linis basi lata vel cordata semi-
amplexicaulis infra medium pec-

Spinuloso-
tination ~~Spinuloso-~~ - dentatis; panic-
ula corymbosa vel fastigiata poly-
cephala; involucri 6-8-phyllo, 5-10-
floro; floribus flavis; acheniis fusifor-
mibus sensim longe ^{usculis} rostratis leviter
10-costatis glaberrimis; pappo uniseri-
ali. - Premanthus dentata, Thunb.
Fl. Jap. p. 301, ex char. Yungia
dentata, DC. l.c. Shaded hillsides,
Itakodadi and Simoda. - Var. gra-
cilior; foliis angustioribus subintegerrimis basi nunc ciliato-dentatis, Si-
moda.

(Root perennial?)
Whole plant very glabrous,
Stem slender, a foot or more in
height, branching at the summit
into paniculate corymbs. Pedicels
slender, ^{erect,} naked, half an inch to an
inch long, subtended by a minute
scale-like bract. Leaves thin, a little
glaucous, ^{1 1/2} to 3 1/2 inches long; the radical
or long, ^{either naked or ciliate, setose,} ~~naked~~ petioles; the lower
cauline ^{often} tapering into a long narrowed

165

base and more or less amplexi-
caul; the others gradually becoming
oblong-ovate and clasping by a broad
base; the lower not rarely lacinate-
pinnatifid or sparingly incised,
but sometimes nearly entire; and
nearly all the cauline ones fringed
at the base or to near the mid-
dle with weak but long bristle-
pointed salient teeth. Involucre $4\frac{1}{2}$
lines long, narrowly cylindrical, loosely
calyculate with 2 or 3 minute bracts,
the scales narrowly linear, obtuse.
Receptacle naked. Flowers commonly
5, or 6, but sometimes as many as 10.
Corolla glabrous. Immature achenia
2 lines long including the slender
beak, the narrow ribs very smooth.
Pappus nearly uniserial, rather fragile,
sordid. — This is the plant mentioned
in my account of the ~~flora~~ botany of
Perry's Japan Expedition, p. 315, and

177
I confidently refer it to Thunberg's
Prenanthes dentata. I do not know
if it is the *P. denticulata* of ~~Hooker~~
Hooker, not having seen the figure.
I have found no more than 10
flowers in the head, and rarely more
than 5 or 6; while Willdenow describes
Prenanthes dentata as 12-flowered;—
a character which must have been
taken from Hooker, since Thun-
berg does not mention their number.
Notwithstanding the solid pappus and
smaller number of flowers in the
head, I cannot well regard this and
the following species as generically
distinct from *Ixeris versicolor* and
I. ramossissima. The two species
which Miguel has described under *Ar-
cium* (in Fl. Ind. Bat. 2. p. 110) ^{are} probably
congeners.

Ixeris (*Ixeridium*) *albiflora* (sp. nov.); Caulibus gracilibus basi stoloniferis gracilibus unifoliatis laxe 3-6-cephalis; foliis ^(oblongo-lanceolatis) ~~subcrenatis~~ integerrimis acuminato-cuspidatis, radicalibus in petiolum gracilem attenuatis, caulino subsessili basi utrinque saepius 1-2-setigero; ^{involucris 5-6-floris;} dicellis gracilibus; floribus albis; acheniis pisiformibus sensim longiuscule rostratis 10-costatis, costis scabrisculis. — Cape Siriki-Saki, Nippon; in swamps. J. Small.

A close congener of the preceding species, and also clearly related to *I. varicolor*. Very glabrous throughout, perennial by slender ^{leafy} runners; the slender flowering stems erect, a foot or less in height, nearly naked, simple or forked above; the peduncles corymbose, minutely bracteate or naked, from one to 3 inches long. involucres,

4. as in the foregoing species. slender.
"Flowers white". Achenia (not quite
mature) lanceolate, striate with 10
salient, but narrow and obtuse, upward-
ly scabrous, ribs, tapering gradually
into a beak ^{slender} considerably shorter than
itself, which is dilated at the insertion
of the pappus in the manner of the
genus. Pappus sordid, as in *J. Thun-
bergii*. Leaves very sharp-pointed,
from an inch to an inch and a half
long, $2\frac{1}{2}$ to 4 lines wide; the radical
and those of the stolons or slender
petioles an inch or more in length.

Youngia integra. *Prenanthes*
integra, Thunb. Fl. Jap. p. 300. Pl. lance-
olata. "Hort. Pfl. Syst. 9. p. 49, t. 66. f. 2"
Willd. Spec. 3. p. 1534. *Youngia*
lanceolata, DC. Prodr. 7. p. 193. Tanega-
sima and Arch-Rock Island south
of Kim-Siu; in crevices of rocks. H. —

This is manifestly Thunberg's
Plant; but I am not sure that it is

Horttuyria, whose specific name I have not adopted. The radical leaves are obovate and oblong-spatulate, and very obtuse; the cauline are oblong, equally obtuse, and sessile by a partly clasping base; all entire. Stem a span to a foot high. Heads numerous in a coarsetate panicle, on very short pedicels. Involucres 4 or 5 lines long, 10-12-flowered. Corollas yellow, their tubes minutely pubescent. Achenia short-persistent, narrowed at the apex but not rostrate, striate with many ribs, smooth or nearly so. Pappus bright white, rather fragile. - This may well be received as a congener of the following, although somewhat different aspect.

165

Youngia Japonica, Lb. Prodr. 7, p. 194. (*Y. Thunbergiana*, *multiflora*, *marginata*, etc. Lb. l.c.) *Prenanthes Japonica*, Linn. Mant. p. 107; Thunb. Fl. Jap. p. 302. *Prenanthes lyrata* & *multiflora*, Thunb. l.c. Hakodadi, in Cemetery, Kin-sin, on the shores of Kagosima Bay.

This, and the apparently very similar Mauritian species are the type of the genus *Youngia*, which with its uniserial pappus, pubescent tube of the corolla, and habit, may probably be kept distinct from *Oreopis*. I have taken the most specific name for the present species, which varies greatly in size and outward appearance, and probably will include all of the eight species ~~area~~ which were known to DeCandolle, except *Y. Mauritanica* and *Y. macrophylla*. The latter, ~~with~~ if the achenia are taken in the manner ~~to be~~ represented by Night, ~~with~~ can hardly belong to the genus.

Sonchus asper, Vill.; Fl. Pan.
t. 893. S. oleraceus, var. asper, Link.;
Simoda; in shady places.

Campanulaceae.

Campanula punctata, Link.,
Dict. 1. p. 586; A. D. C. Prodr. 7. p. 465;
Ledeb. Fl. Ross. 2. p. 878. Simoda;
on hills.

An Eastern Siberian species, which
A. DeCandolle had already noted as from
Japan, on the authority of a specimen
in the Lambertian herbarium. Mr.
Wright gathered a single, robust, many-
flowered specimen; the corolla shaped
as in the figure of Gmelin, not
elongated as in that of Schrank.

Adenophora verticillata, Fisch.; A.
D. C. Prodr. 7. p. 492; Sieb. & Zucc. l. c. Campanula
tetraphylla, Thunb. W. coast of Jesso, J. Small. A large
form.

Ericaceae 167

Vaccinium (Oxycoccus) macrocarpon,
Sit. Kew. 2. p. 13. t. 7; Hook. Bot. Mag. t. 2086,
& Fl. Ross. Am. 2. p. 34. Near Hakodadi; in
very shady and wet marshes, J. Small.

It is extremely interesting to receive
the American Cranberry from Japan,
the more so as it ^{apparently rare} ~~perhaps does not~~
~~occur in N. America, where only Douglas has collected it,~~
~~indeed mentions it, on the authority of~~
~~Douglas, as common at the mouth of~~
~~the Ogish River. I have received the~~
~~Oxycoccus from that quarter, but never~~
~~the former species; nor does~~ ^{and} ~~Ledebour~~
^{does not} give it from Russian America, where the
Oxycoccus ~~humer~~, occurs.

Vaccinium Vitis-Idaea, Linn.;
Ledeb. Fl. Ross. 2. p. 901; Trautv. & Meyer,
Fl. Ochot. p. 61. Summit of moun-
tains, northeast of Hakodadi; spreading
over rocks,

New to the Japan flora, but
within the range of the species, which
extends quite round the world in the northern temperate and sub-
arctic zone.

Naccinium Smalii (sp. nov.):

caule 3-5-pedali ramulisque tereti-
bus glabris; foliis deciduis ovalibus
oblongisve breviter acuminatis subses-
silibus penni-venis creberrime ciliato-
serrulatis ad costam venisque præ-
sertim subtus pubescentibus; fasciculis
corymbisve paucifloris ^{semilibus} gemma ter-
minati; bracteis caducis; ~~corolla car-~~
~~incarnata vel rubra~~ calycis limbo
5-fido, lobis semi-orbiculatis glandu-
loso-ciliolatis; corolla incarnata vel
rubra breviter campanulata; fila-
mentis ^{villoso-} ciliatis; antheris exaristatis,
~~loculis longe~~ tubulis longis subexser-
tis; ovario 5-loculari. — Summit
of mountains north east of Hakodadi.
Also in shady swamps, Cape Roman-
zoff, J. Small.

The specimens are in blossom
and with young fruit. In foliage
the plant most resembles *N. myrti-*
loides, Hook (non Michx.) ; but the

in flower, flowers, the lobed
limb of the calyx, &c. are very
different. Leaves $1\frac{1}{2}$ to $2\frac{1}{2}$ inches
long, and from $\frac{3}{4}$ to $1\frac{1}{2}$ inches in
width, membranaceous, veiny, corolla
broadly campanulate, 3 lines long,
moderately 5-lobed. Berry 5-celled,
with no dorsal partitions or pro-
jections. This species is inter-
mediate between the sections *Euvac-*
cinium, of which it has the fruit,
and the *Cyanococcus* of Eastern North
America, ~~having the~~ with which
it accords in every thing but the fruit,
N. praestans; newly brought to light
in the Kantschatka collection, ex-
hibits the same floral characters; but
the anthers have rudiments of the dor-
sal awns of *Euvaccinium*, to which
it may therefore be referred, ^{the name of} this
well-marked new species ~~may commemo-~~
~~rate the~~ is in acknowledgement of the services
rendered by Mr. Wright's humble, but

11
invaluable assistant, J. Small,
who collected plants with great dili-
gence, and while attached to the
Steamer Water-Nitch, made a
the botanical collections along
the Straits of Sangar, on the
~~Western~~ and northern coasts of Jesso,
~~in the~~ and ^{around} the shores of the
Ochotsk Sea, &c.

~~Perhaps the ^{specimens of} *Prunella* ^(one) ~~was~~
gathered on the northern coast of Japan.
The ticket does not record the exact date
in July, but it was probably found
from Kamtschatka.~~

Empetrum nigrum, Linn.;
Ledeb. Fl. Ross. 3. p. 555. Cape
~~Sive~~ Siriki-Saki, Nippon. J. Small.
in fruit.

11

Leucothoe chlorantha (sp. nov.);
humilis; ramis glabris; foliis chartaceis
subsessilibus ovalibus hirtello-ciliatis
subtus reticulato-venosis, junioribus
~~subtus~~ ~~pro~~ pl. m. hirtellis; racemis
terminalibus erectis vel patentibus
fere glabris; basi foliatis; bracteis
plerisque linearilanceolatis ~~floribus~~
flores ^{sub}secundos ^{vel paulo longioribus} paucis superantibus;
pedicellis calyce ^{deinde breviter} aequilongis; corolla
~~globosa~~ campanulata viridula; filamentis
seabris; antheris muticis. — Hakodadi;
on hills.

A low, branching shrub, a foot
or so in height; the branches very
leafy. Leaves ^{strongly ciliate} about 2 inches long,
the larger ones an inch and a half wide,
obtuse or rounded at the base, mucronate,
often with a short acumination; the
upper surface glabrate, the lower beset,
especially on the veins and midrib,
with somewhat glandular and stiff
short hairs. Racemes 3 to 5 inches

long; the flowers rather crowded;
^{some of} the lower ones subtended by oblong
or lanceolate leaves, which farther
up are reduced to lanceolate or linear,
rather persistent bracts. Pedicels
mostly secund, only one or two lines
long, bearing one or two subulate
minute bractlets, the apex articulated
with the flower. Calyx ^{glabrous}, deeply 5-parted;
the divisions oblong-ovate, obtusish,
nearly herbaceous, early open in aesti-
vation, but at first somewhat imbrica-
ted, scarcely half the length of the co-
rolla, remaining wholly unchanged
underneath the capsule. Corolla
"light green", 2 lines long, ovate-
globose in the bud, in anthesis glob-
ular and becoming short-campanulate,
glabrous. Disk a narrow ring. Fila-
ments subulate, ^{scabrous} or slightly
hirsute on the inner side ^{not appendiculate}, thrice the
length of the ovate anther: cells of the
latter slightly pointed at the orifice,

172
which is truncate and entirely
muticous. Capsule depressed,
somewhat 5-lobed, ^{scarcely umbilicate,} minutely pubes-
cent, loculicidal; the placenta
pendulous from the summit of the
columnella. Seeds fallen from
the capsules of the former year) not
seen. — ~~The~~ wholly unchanged calyx
and naked capsule, ~~and~~ with the
seeds evidently pendulous ^{(refer} ~~require~~
this species to *Leucothoe* rather
than to *Gaultheria*. The leaves
are minutely and thickly pellucid-
punctate, not aromatic to the
taste (at least in the dried speci-
mens), but bitter, ~~and rather~~ astrin-
gent, and somewhat mucilaginous,
like those of *Chimaphila*.

Andromeda (Pieris) elliptica, Sib.
& Zucc. Trans. Nat. Hist. Zaps. 2. p. 2;
May in Perry. Zaps. Exped. 2. p. 315.
Simoda; on hills,

The larger leaves are ovate, acuminate, and with a rounded or subcordate base; but they are thinner and the veins less strong and straight than those of *A. ovalifolia*.

Menziesia ferruginea, Smith;
var. *globularis*, Gray, Man. Bot. A.
M. S. ed. 2, p. 256. *M. globularis*,
Salisb. Parad. Lond.; Hook. Fl. Bor.-Am.
2, p. 40; DC. Prodr. 7, p. 714; Ledeb. Fl.
Ross. 2, p. 917. *M. Smithii*, Michx.,
Fl. 1, p. 235. Summit of mountains
northeast of Hakodadi.

This is another interesting addition to the flora of Japan. The specimens are exact counterparts of those of ~~the~~ ^{our} Alleghany Mountains; while the woods of the Northwest Coast of America and the islands abound with *M. ferruginea*, - differing only in having a more cylindrical ~~corolla~~ ^{corolla}, and the strigose pistles commonly ferruginous; - and in the ~~leaves~~

17
Northern Rocky Mountains an intermediate form occurs. I doubt not that all belong to one species, of which the Japanese and the Eastern North American forms are most alike, as happens in several other cases.

Ledum palustre, Linn.; var. vulgare & var. dilatatum, Wahl.; Ledeb. Fl. Ross. 2. p. 923. (Cape Komaroff, ~~the forms~~, on mountain-tops; both forms, J. Small. Summit of mountains, northeast of Hakodadi.

The larger-leaved form approaches L. latifolium, but the leaves are less obtuse and the pods are oval. The latter ^{character} which is the only one of any specific consequence, is ~~probab~~ apparently not strictly definite; so that our L. latifolium is probably a derivative of L. palustre.

Azalea serpyllifolia, Gray in
Perry, Jap. Exped. 2. p. 315. Simoda,
on shady hill sides.

"A widely spreading bush, 2 or 3
feet high." ^(The present are undoubtedly wild specimens.) The leaves are no larger
than those of Dr. Williams and
Morrow's specimens. The corollas have
fallen but the bud-scales remain; these
are very broad, convolute, and the mid-
dle of the truncate summit, or behind
it, is a small tuft of long and stiff,
bristles, of the same chestnut color.

Azalea Japonica (sp. nov.);
foliis cum floribus cœtaneis spathe-
ulato-oblongis obtusis ciliatis cori-
coloribus supra strigoso-hispidulis
subtus ad costam ~~ramulisque novellis~~
parce strigosis; umbella sessili plu-
riflora; pedicellis tubo corollæ ~~bre-~~
longioribus cum calyce brevissimo
pilis longissimis patentibus fulvis

hispidis; corolla flava extru-
entello-pubescente; staminibus 5 sub-
inclusis; ovario ~~longe hispidiss~~
villoro-hispidissimo. — Hakodadi,
in gardens; J. Small.

The scanty specimens appear to
belong to an undescribed species, ~~allied~~
of genuine *Azalea*, allied to *A. Pon-*
tica, *occidentalis*, and *calendulacea*.
It is remarkable for the long, ^{pubescent} strigose
bristles of the pedicels and especially
of the calyx, upon which they are 2
lines long and thickly set: on the
ovary they are still denser. The young
branches are also hispid, but ~~soon~~
at length glabrate. Leaves minora-
ceous, deciduous, ^{green both sides,} 2 to 3 inches long,
Pedicels nearly an inch long, corolla
much like that of *A. Pontica*, said to
be "pure bright yellow"; the throat
much dilated; the fine pubescence
externally not perceptibly glutinous.
Stamens rather shorter than the corolla;

filaments pubescent towards the base. Style exserted.

Azalea Indica, Lin. Rhododendron (Indicum) Indicum, Sweet; Ob. Prodr. 7, p. 726; Nas. flowers pink, scarlet, and crimson. Hill-sides, Simoda and Hakodadi.

Azalea lewifolia, Hork. Bot. Mag. t. 2901. Rhododendron lewifolium, Ob. l.c.; Hib. & Zucc. Lam. Nat. Ed. Jap. 2, p. 7. Hakodadi; cultivated. ~~Flowers~~ white.

Flowers white. Probably only a variety of A. Indica.

Rhododendron brachycarpum, L. Don, in G. Don, Syst. 3, p. 843. Hakodadi, ^{shaded} on hill sides, small. Summit of the mountains northeast of Hakodadi.

Don briefly characterized his R.

Brachycarpum from a ~~speci~~ Japanese
specimen in Lambert's herbarium; and
the name of the collector is not given.
Until now it has remained obscure;
but it is recognizable in the two small
specimens of the present collection; —
one of them (from the mountains) ~~in~~
with just-opening flower-buds; the
other with a few ~~late~~ ^{unexpanded} flowers and
forming fruit. The corolla in the
former is red-purple; in the latter
the corolla is ~~white~~ said to be white.
The shrub is said in ~~the~~ ^{the} one case to
be about two feet high; in the other,
12 feet. Leaves exactly elliptical-oblong,
3 inches long, and $1\frac{1}{2}$ inches or less in
width, ~~truncated~~ or retuse at both
ends, mucronulate, glabrous and green
above, whitened (not rusty, as described
by Don) underneath with a very fine
and close tomentum, like that of R.
Nethermichii. Scales of the flower-bud
silkily externally, ^{the} corolla shaped like
(lobes of the calyx very short and rounded)

that of *R. bataviense* but considerably smaller, an inch long, Stamens 10, included; filaments villous, pubescent near the base. Style half an inch long, curved just below the dilated stigma. Ovary or forming fruit short-oval, ferrugineous. — The species singularly resembles ~~Peru~~ American *R. bataviense* (in which, by the way, the lobes of the calyx are neither oblong nor elongated in any specimens); from which the ^{persistent} fine, ^{dimen-} ture of the lower surface of the leaves, the smaller flowers, ^{the} more pubescent Stamens, and the much shorter ovaries distinguish it.

Pyrola rotundifolia, Linn.;
var. *incarnata*, DC. Prodr. 7. p. 772;
Ledeb. Fl. Ross. 2. p. 928; Gray, Man.
Bot. ed. 2. p. 259. *P. incarnata*, Fischer,
Hakodadi; on shaded hill sides.

Flowers pink! Leaves orbicular,
sometimes retuse at the base. Exactly
like Eastern North American and Siberian
specimens; differs from our var.
uliginosa mainly in the narrower
lobes of the calyx.

Pyrola media, Swartz; Dc. l. c.;
Ledeb. l. c.; Sieb. & Zucc. Fam. Nat.
Fl. Jap. 2. p. 7. Simoda; in shady
woods. (Flowers white.)

This is not known to occur in Asia
east of the Caucasus, nor in Amer-
ica. The few specimens in this
collection are not well developed, but
I believe they belong to *P. media*.

Pyrola minor, Linn.; Dc. l. c.;
Ledeb. l. c.; Hook. Fl. Bor.-Am. 2. p. 45.
Cape Romanoff? or some northern
part of Zesso (the ~~locality~~ station
not recorded). J. Small.

New to the Japanese flora; but
only two specimens collected.

Moneses uniflora, Gray, ~~Man.~~
M. grandiflora, Salisb.; Fl. l. c.;
Ledeb. l. c.; Frantv. & Meyer, Fl. Ochot.
p. 65. Pyrula uniflora, Lin.; Hork.

l. c. A single specimen was
accidentally collected by J. Small, en-
tangled with ~~the~~ one of Pyrula minor.

It is new to the Japanese flora, but
naturally to have been expected.

Diapensia Lapponica, Lin.
Summit of mountains northeast of Hako-
dadi; on rocks, in dense patches.

This ~~shows that~~ ^{unequivocally} indicates an
alpine region upon the mountains
near Hakodadi, which, however, do
not rise to any great height.

Styracaceae

Styrax Japonica, Sieb. & Zucc.
Fl. Jap. 1. p. 53, t. 23; Gray in Perry, Jap.
Exped. 2. p. 316. Simoda.

Ebenacea

Diospyros Kaki, Linnaeus, f. Suppl.
p. 439; Thunberg, Fl. Jap., p. 158; Sieb. & Zucc.,
l.c. Simoda, on hill sides; in blossom,

Myrsinacea

Ardisia Japonica, Blume, Bijdr., p.
690; A. DC., Prodr., 8, p. 135; Sieb. & Zucc.,
Fam. Nat. Pl. Jap., 2, p. 14. Bladhia
Japonica, Storck; Thunberg, Fl. Jap., p.
p. 95, t. 18. Simoda, on hill sides.

Plants from 2 to 12 inches high;
leaves from 1 to 3½ inches long. Berry
red or crimson. As to Bladhia
glabra, Thunberg, (Ardisia glabra, A. DC.) I sus-
pect it may be my Tricercandra quad-
rifolia.

Myrsine neriofolia, Sieb. & Zucc.,
l.c. M. capitellata, var. parvifolia,
A. DC.? Benth. in Kew Jour. Bot., 4, p.
301. Simoda; on shady hills.

146
Shrub 6 to 10 feet high. The same as the plant from Hong Kong, but the leaves are generally longer and more like those of *Merium* ~~*glaberrimum*~~. We have the same in the collection from Ousima, and, in fruit, with spatulate stamens and very obtuse leaves, more shining above, from the Bonin Islands. All perhaps belong to *M. lucida*, Wall., but hardly to *M. capitellata*. Ruessari. describes the lobes of the calyx as lanceolate and acute; sometimes they are acutish; but in a specimen communicated by him, they are ovate and very obtuse, as in ^{most of} the other specimens.

Primulaceae.

Primula cotusoides, Linn.; Thunb.
Fl. Jap. p. 82; Duby in Sb. Prodr.
8. p. 36. Cape Dangar. J. Small.
A single specimen, in fruit

Primula japonica (sp. nov.): undi-
que glabra; foliis oblongis vel spatula-
tis obtusis argente saepius duplicato-
denticulatis in petiolum alatum
breve attenuatis ^{membranaceis?} ~~efarinosos~~ venosis
efarinosus sed junioribus subtus atom-
iferis; scapo angulato (pedali vel sesqui-
pedali) ~~multiflora~~ multiflora; floribus
verticillatis; involucri foliolis lineari-subu-
latis inappendiculatis integerrimis
pedicellis 2-3-plo brevioribus; calyce
ovato-campanulato, lobis triangulari-
subulatis tubo intus farinifero aequi-
longis corolla ~~tubo~~ purpurea tubo
pluribus brevioribus; lobis corollae obor-
datis; capsula globosa vertice nuda
demum irregulariter rupta. — Hako-

100
Dadi, on hill sides, and in moist cultivated ground.

Imperfect specimens were also gathered at Hakodadi by Drs. Williams and Morrow. It appears to be common, and as it is a striking and showy species it is extraordinary that it has not before been made known. Although the leaflets of the involucre are not at all foliaceous, the plant evidently belongs to Dubij's section *Spondyphylla*; and, although there is no radiate crown on the ovary or capsule, it is a congener of Dr. Nriese's *Cancerinia chrysantha*. — Leaves all in a radical cluster, from 6 to 10 inches long and $1\frac{1}{2}$ to $2\frac{1}{2}$ wide, thin, the petiole ^{wing} ~~margin~~ed to the base. Scape sharply or strongly angled, naked, bearing from 2 to 6 many-flowered whorls of flowers. Pedicels half an inch or an inch long, calyx 2, or in fruit 3 times in length; the lobes subulate-acuminate from a broad triangular base. Corolla deep pink or purple; the slightly funnel-form tube half or two thirds of an inch long; the lobes

11
broadly obovate or deeply emarginate, ^{about 5 lines long.} ~~stamens~~ Anthers in the throat of the corolla. Style filiform, as long as the tube of the corolla, not twisted. Capsule 3 lines in diameter, apparently a little fleshy and opening neither by valves nor teeth. Placenta globular, scarcely stipitate, covered with angular scribbulate-reticulated seeds.

Lysimachia clethroides, Duby
in Lab. Prodr. 8. p. 61; Sieb. & Zucc. l.c.
p. 15. Simoda, on hills. (Flowers
undeveloped.)

Lysimachia lubinioides, Sieb.
& Zucc. l.c. p. 16, Simoda;
also gathered by J. Small on Nippon
in the Straits of Sangar, near the sea-side.
^{plant rather fleshy.}
"Flowers white, or very light purple."
Stems usually decumbent
at the base. Lower leaves tapering

121
into a margined petiole, ^{Divisions} ~~lobes~~ of the
corolla ~~oblong~~, spatulate or oblong-
oblanceolate. - This accords with
the brief character of *L. lineariloba*,
Hook. & Arn. (and Mr. Wright gathered
the same species at the Loo Choo-
Islands), except that the divisions of the
corolla are ~~not~~ linear, and the
leaves are minutely dotted. But
Ruccarini describes *L. lineariloba*
from Bonin Islands, as having the
pedicels only 2 lines long, the sepals
lanceolate ^{lobes of the corolla linear-oblong,} and acute, the stamens
perfectly free, and the anthers ovate,
characters which contrast with his
L. tuberculoides. Nevertheless I suspect
that all belong to one species.

Lysimachia Japonica, Thunb.
Fl. Jap. p. 83. & Le. Jap. t. 16; Sieb.
& Rucc. l.c. Simoda and Hoko-
dadi, on shady hill sides.

17
The leaves vary from half an inch to an inch in length, exclusive of the petiole; the upper alternate, or more commonly all opposite. Peduncles usually reflexed in fruit, as in Thunberg's figure. Pod opening by valves, not circumscissile, seeds rather numerous.

Naumburgia thyrsoiflora, ^{Reichenb.;} Drury in
Ob. Prodr. 8. p. 60; ~~Reichenb.~~ Fl. Ross. 3. p.
14. In marshes, near Hakodadi.

170
Plantaginaceae.

Plantago media, Linn.; Ledeb.
Fl. Ross. 3. p. 480; Gray in Perry, Jap.
exped. 2. p. 316. Hakodadi, on hill-
sides, and on the sandy shores of the bay.

Lentibulariaceae.

Utricularia intermedia, Hayne;
Ob. Prodr. 8. p. 7; Trautv. & Meyer, Fl.
Ocht. p. 65. Near Hakodadi, in mar-
shes.

New to the flora of Japan; not
found in western North America, and
apparently scarce in Northern Asia.
It occurs, however, in the Okhotsk
flora and in Altai.

Scrophulariaceae

Pandownia ^{imperialis} ~~japonica~~, Sieb. & Zucc. Fl. Jap. p. 25, t. 10, Bigonia tomentosa, Thunb. Fl. p. 252, On hillsides

Linaria vulgaris, Mill.; Benth. in DC. Prodr. 10. p. 273. Hakodadi; on banks near the sea.

Short flowering branchlets, mostly with verticillate leaves. New to the flora of Japan.

Scrophularia alata (sp. nov.); glabra; caule valido pl. m. tetra-
ptero; foliis ovatis acuminatis crenatis
basi plerumque subcordatis, petalis
alatis inappendiculatis; thyso elon-
gato basi foliato; cymis pedunculatis
base multifloris tenuiter glanduloso-pubes-
centibus; calycis laciniis orbiculatis
margine subcariosis; anthera sterili

obovato-rotunda petaloida flabel-
lato-venosa magna; capsula
ovato-globoza. — Shaded hills, near
Itakodadi. Also straits of Sangar,
on mountain-sides. f. Small.

Plant ^{to 6} 4 feet high; the stout
stem square, with sharp angles
which for the most part bear folia-
ceous wings. Leaves ^{5 to 8} ~~5~~ inches long,
or the upper ones successively smaller,
and in the thyrsus reduced to ~~bracts~~
lanceolate bracts, acute or acuminate;
the petioles from half an inch to an
inch and a half long, broadly wing-
margined. Flowers twice the size of
those of *S. aquatica*; the sepals much
less ~~membranaceous~~ scarious-mar-
gined. Corolla from $4\frac{1}{2}$ to nearly 6
lines long, "dark-red" or "purple"; the
two upper lobes much larger than the
others. Stamens not exerted. Sterile
anther equally thin and petaloid
with the upper lobes of the corolla, and

not much shorter than they, not
papillose but slightly puberulent
~~at~~ on its upper face, $1\frac{1}{2}$ or ^{nearly} even
2 lines in length, veiny. - This
well-marked species is manifestly
allied to *S. aquatica* of Europe and
northern Asia.

Mazus rugosus, Lour. Fl. Coch.
p. 385; Benth. in DC. Prodr. 10. p. 375.
Lindernia Japonica, Thunb. Fl. Jap. p.
253. *Horreumannia bicolor*, Willd.; Reich-
ent. Ic. Exot. t. 37. Simoda; on hills.

Var. *diffusum*; libenter stolonifer;
floribus sesquialter vel duplo majoribus;
corolla calycem nunc triplo bis
terve superante. - Shikodadi; common,
in shady places.

Corolla purple or white, the
palate speckled with yellow, from 6 to
9 lines long. Pedicels ~~usually~~ longer
than the calyx (as they are in the ordi-
nary *M. rugosus*), sometimes an inch
in length. Calyx deeply 5-cleft; the

lobes ovate-lanceolate or oblong, acutish. The specimens do not accord with the characters either of *M. surculonis* nor *M. dentatus*, and at first view appear very ~~differe~~ different from *M. rugosus*. But the structure of the flower is the same, and intermediate forms occur.

Veronica Thunbergii (sp. nov.):
 caulibus e basi prostrato adscen-
 dentibus validis bipedalibus crebre
 aequaliter velutino-tomentosis; foliis
 sessilibus ovatis subcordatis obtuse serratis
 subincisis molliter pubescentibus;
 racemis laxis plerumque oppositis;
 pedicellis calyce subaequilongis
 bractea sub dimidio brevioribus;
 capsula plano-compressa orbiculato-
 obcordata ~~transverse~~ satis latiori ~~tra~~
 glabra margine ciliata. — *N. Chamadrys*.
Thunb. Fl. Jap. p. 20? Hillsides and roadsides, Hakodadi.

This very much resembles *N. Chamædrys*, but is a larger and stouter plant, the stems a quarter of an inch in diameter at the base, and densely tomentose with recurved spreading pubescence. Pedicels barely 2 lines long when fructiferous; the calyx about 3 lines long, the lobes linear-oblong; bracts 3 to 5 lines long, corolla purple. Capsule not in the least triangular, but orbicular-obovate and more or less wider than long. I have no specimen of *N. maxima*, Steud. from the character of which our plant differs as much as from *N. Chamædrys*.

Veronica longifolia, Linn.;
Benth. l.c.; Ledeb. l.c.; var. foliis sub-
tus canescenti-pubescentibus; pedicellis
calyce longioribus. — Slope Point,
on the west coast of Ilesso, J. Small.

176
A large-leaved form of the species, nearly the *N. luxurians* of Ledebour, but the leaves whitish-downy beneath, the racemes mostly panicle. "Flowers light blue."

Pedicularis resupinata, Linn.;
Benth. in Ob. Prodr. 10. p. 581; Ledeb.
Zl. Ross. 3. p. 281. Hakodadi; on
hill sides, J. Small.

Solanaceae

Physalis Alkekengi, Linn.;
Schk. Handb. t. 45; Dieb. & Zucc. l.c.
Simoda; in fields.

Apparently a glabrous form of the species.
~~Perhaps~~ *P. ciliata*, Dieb. & Zucc. (*P. angulata*, Thunb.) is not different.

Verbenacea.

Callicarpa Japonica, Thunb.
Fhl. Jap., p. 60? Sieb. & Zucc., Ham.
Nat. Jap. 2. p. 30. Kiu-siu, on
hillsides among Pines.

"A tall, slender shrub, ~~flowers~~
with purple berries". Flowers not
seen. The same ^{Siebold and} as Ruycarini's
plant (which I possess a flowering
specimen), but with even larger
leaves, viz. from 4 to 8 inches in length.
But Thunberg's C. Japonica, with
"folia bipollicaria" is more likely to
be Siebold and Ruycarini's C. gra-
cilis, ~~Schauer is probably quite~~
~~wrong in referring C. Japonica~~
~~Thunberg's~~ Both are widely
different from C. longifolia, to which
Schauer refers C. Japonica.

Callicarpa mollis, Sieb. & Zucc.
l.c.; Gray, in Perry, Jap. Exped. 2, p. 31b.

Simoda; in shady places.

Labiata.

Ajuga ciliata, Brunge, Enum.
Pl. Chin. Bor. p. 51; var. villosior,
A. orientalis, Thunb.? Itakodadi, on
hill sides.

Plant a foot or a foot and a half
in height, and in other respects
agreeing with the characters of Brunge's
A. ciliata, except that the stem is
retroscely villous-pubescent throughout,
bracts purple or purplish, ovate or
ovate-lanceolate, the upper ones entire,
the lower more or less incised. Corolla
blue; the tube half an inch long,
not twisted.

Ajuga decumbens, Thunb. Fl.
Jap. p. 243, ex char. hanc Benth. A.
remota, Benth.? in Nall. Pl. Asiatic. Ran.

1. p. 59, Lab. p. 694, & in Fl. Prostr.
12. p. 597; ~~for~~ Gray in Perry, l.c.,
Simoda; in shaded places.

I do not doubt that this is
Thunberg's *A. decumbens*; ~~and also,~~
~~perhaps,~~ ~~Benthams *A. remota*, at least as to~~
~~the Japanese plant~~ (but am by
no means clear that it is Benthams
A. remota. The plant is not villous
and the leaves are apparently thin
and tender, certainly not thickish and
subcoriaceous. The stems are diffusely
decumbent or ^{but not stoloniferous,} spreading; the flowers
mostly in the axils of ordinary leaves.
Lobes of the calyx acute.

Ajuga pygmaea (sp. nov.):
glabella, effuse stolonifera, subcan-
lis; foliis rosulato-confertis spatulatis
sinuatis repandis ^{basi} in petiolum
attenuatis flores axillares plerumque
superantibus; calycis lobis oblongis obtu-
sis; corollae caeruleae tubo longe exserto,

22
labio superiori bipartito lobis
lateralibus paullo brevioribus, inferiori
lobo infimo emarginato-
bifido. — *Simoda* (?)

A remarkably small species,
which, as to floral characters might
equally well be referred to *Tenereium*.
Stems not rising above the ground,
apparently biennial, bearing a radical
cluster of leaves of an inch or
a little more or less in length, in-
cluding the petiole. From their
axils proceed filiform runners,
by which the plant multiplies,
like a strawberry. Flowers solitary
or few in the axils, fascicled,
subsessile, or on pedicels about the
length of the calyx. Calyx campan-
ulate, regular, equally 5-cleft,
the lobes about the length of the
tube, somewhat pubescent, several
times shorter than the corolla. The

latter is large for the size of the plant, about half an inch in length, blue or bluish; the two upper lobes ovate, obtuse, as deeply separate from each other as from the oblong lateral lobes of the lower lip, the middle lobe of the latter larger and dilated-obcordate. Stamens & style of the genus, slightly exserted,

Calamintha? gracilis, Benth.!
in Db. Prodr. 12, p. 232. ^{Singoda, on}
^{at the same place!}
shaded hills; also collected by Williams and Morrison, and by Mr. Wright at the Loo Choo Island.

Flowers much smaller than those of *C. umbrosa* and *C. debilis*; the verticillastri mostly approximate in a crowded, ^{interrupted} racemose inflorescence, calyx scarcely hispid, the teeth not prolonged, nearly equaling the pink or purplish corolla. Upper pair of stamens ~~abortive~~ sterile or rudimentary; yet the plant belongs ~~here~~ rather to *Calamintha* rather than to *Hydeoma*.

Thymus Serpyllum, Linn.;
Benth. Lab. & in Ob. Prodr., 12. p. 200;
Lidelm. Fl. Ross. 3. p. 345. Cape Soya,
northern extremity of Jesso, on hillsides,
J. Small.

New to the flora of Japan, but
found in the adjacent Okotsk region
as well as throughout Siberia.

Nepeta Glechoma, Benth.; var.
grandis; foliis sesqui-bipollicaribus sinu-
sapius levi; calyce magis campanulato,
dentibus tubo dimidio brevioribus; corolla
in maximis pollicari, tubo exserto. —
Hakodadi, in hedges.

This might ^{naturally} ~~well~~ be taken for
a distinct species; but these are
connecting forms.

Dracocephalum Ruyschiana,
Linn.; var. Japonicum; caule cum
costa marginibus ^{revolutis} foliorum puberulis;
bracteis ovatis aristatis villosis-ciliatis
calyces pisto. pubescentes aequantibus.
— Cape Siriki-saki, north end of
Nippon, in sandy places, J. Small.
Most probably a mere variety of

S. Ruyschiana, to which Ledebour reduces *S. Argemense*; but besides the peculiarities mentioned the calyx-teeth are rather narrower and more pointed; the ampliate corolla an inch and a half in length, "light blue."

Brusella vulgaris, Linn.; Thunb.
Fl. Jap. p. 250. Hakodadi; common on hillsides.

Scutellaria Indica, Linn.;
Benth. in Ob. l. c. p. 417; Sieb. & Zucc.
l. c. Simoda, B. and Hakodadi.

The specimens from Hakodadi and from the northern part of Nippon are thinner leaved and less downy than the rest, which accord with the Chinese plant; ^{also} the leaves are more ovate and ~~less obtusely~~ rather serrate than crenate. In fact they are just intermediate

between *S. Indica* and the fol-
lowing.

Scutellaria Japonica, (Morr. &
Decaisne, in Ann. Sci. Nat. Ser. 2. 2. p. 315;
Benth. l.c., Hakodadi; growing in
the shade of shrubs.

Slender, and apparently depau-
perate specimens, from 6 to 12 inches
high, glabrous, except some scattered
hairs on the calyx and a fine pu-
bescence on the corolla. Anthers
minutely and densely ciliate, as they
are also in *S. Indica*. The speci-
mens ^{extremely} ~~very~~ much resemble the scarce
North American *S. Saxatilis*.

The "*Scutellaria*, sp. nov. *S.*
minori affinis" Sieb. & Zucc. l.c.,
which is pretty clearly *S. hederacea*
of Kunth, was gathered by Mr. Wright
at the Lov Chor Islands only.

Stachys ~~Chinensis~~ palustris,
Lin.; var. aspera, forma angus-
tifolia. S. Chinensis, Brunze?
In marshes about Itakodadi, J.
Small.

Poor specimens, which accord
well with S. aspera, Michx, except
in the narrower leaves.

Lamium petiolatum, Royle;
Benth. in Bot. Misc. 3. p. 381, & DB.
l.c.; Gray in Perry, Jap. Exped. l.c.,
L. barbatum, Sieb. & Zucc. l.c., Itako-
dadi, in shady woods. "Flowers white,"

2
Boraginaceae.

Lithospermum officinale, Linn.;
Ob. Prodr. 10, p. 76; Ledeb. Fl. Ross. 3, p. 130,
Hakodadi, on the sides of mountains.

The specimens are in blossom,
~~only~~ fruit not seen. But the root is
certainly perennial, so it cannot be
Richard and Zuccarini's L. erythrorhi-
zon.

Mertensia maritima, Don; Ob.
Prodr. 10, p. 88; Ledeb. l. c. Cape
Sangar, Nippon, on the sea-shore,
~~(near to the flora of Japan)~~ J. Small.

Eritrichium Guiljelmi (sp.
nov.); Onophalodi Nerua simillimi-
num; racemis elongatis; corolla alba;
nucibus arrectis ~~acutis~~ triquetris pu-
berulis facie exteriori planis late del-
toidei- ovatis acuminatis marginis
acuto integerrimo, stipite crasso. -
Onophalodes? Gray in Perry, Jap.
Exped. 2, p. 317. Hakodadi, in damp

and shaded ravines; also along
rills, on the sides of mountains
northeast of Hakodadi.

Stems a span or more in
height from a thick and creeping
rootstock, glabrate, bearing from 3 to
6 leaves. Lowest cauline leaves and
those of the rootstock ovate and sub-
cordate or decidedly cordate, apicu-
late, submembranaceous, pubescent
under a lens with short appressed
hairs, $1\frac{1}{2}$ to 2 inches long, and on
long, more or less margined petioles;
upper leaves similar but ovate,
and with successively shorter petioles.
Raceme single or ~~stipid~~ two-parted,
ebracteate, ~~or~~ sometimes bearing a
leaf or two at the base, loosely
many-flowered, in fruit ~~becoming~~
filiform and attaining the length of
6 to 10 inches. Pedicels in flower 3 or
4 times long, spreading, in fruit 5 to 9

lines long and more or less re-
curved, filiform. Calyx 5-parted;
the divisions lanceolate-oblong, obtuse,
in fruit enlarging and becoming
2 to nearly 3 lines in length, spreading.
Corolla rotate, as large as that of
Ruphalodes verna, "white with a
yellow eye", i.e. the salient glandular
forices and the partly exerted ob-
long anthers yellow: aestivation not
determined. Style short, included.
Nutlets 4, erect-converging, much
longer than the style, nearly a line
and a half long, inserted ~~on~~ the de-
pressed disk (free from the style) by
a large and thick lateral stipe;
all the angles acute, the summit
pointed; external face much the
broadest, when young appearing
concave and somewhat ridged in
the middle, at maturity flat
plane, with a very acute edge, but
not margined: in texture the pericarp

is chartaceous, black and shining at maturity, smooth, but with vestiges of a minute pubescence. Seed ascending, conformed to the cell, inserted at ~~the hollow style~~ its inner lower angle.

~~A flower~~

Flowering specimens of this plant were gathered at Sukodadi by Drs. Williams and Morrow, and were mentioned in my account of their collections as a doubtful *Onophalodes*. The present fine specimens, gathered on the 20th and 22nd of June, are in fruit. The plant so closely resembles *Onophalodes verna* that it is really unnatural to refer it to a different genus. But the fruit is that of *Eritrichium*, sect. *Oreocharis*, Lab., and is neither depressed, nor calathiform or wing-margined, ~~and~~ so that, in

(much needed)

the revision of the Borraginæ or
~~genera which is much needed~~
 genera, this plant can hardly
 be made an ~~congener~~^{named} of *Orypha-*
lodes. The species is in compliment
 to Dr. J. W. Williams, the original
 discoverer.

Heliotropium Japonicum
 (sp. nov.): nanum, multicaule
 e radice perenni, sericeo-villosum;
 foliis ellipticis seu obovato-oblongis
 sessilibus; cymis brevibus confertifloris;
 calycis hirsutissimi laciniis erectis
 linearilanceolatis obtusis tubo corollæ
 hirsutissimis dimidio brevioribus;
 limbo corollæ amplo albo valde
 plicato, lobis subrotundis; antheris
 micromulatis; stigmatibus conico-ag-
 ariciformi obtusissimo medio leviter
 constricto ^{style brevior} — Takodadi, on the
 sandy shores of the bay, and on plains
 in the vicinity.

A remarkable species, with "sweet-scented" flowers which are surpassed in size, perhaps, only by *H. convolvulaceum* (*Euploea convolvulacea*, Nutt.). The subterranean portion of the stems reddish, apparently somewhat lignaceous; only a span high above ground, rather stout, whitened with erect villous-hirsute hairs, simple or branching leafy. Leaves about an inch and a half long, very obtuse, pinnately veined, entire, clothed with soft hairs on both sides, but less so, or somewhat glabrate above. Ovary short-peduncled, twice or thrice forked, very villous or hirsute; the rays short; the flowers much crowded, Corolla half an inch in length, ^{between} funnel-form and salver-form, hirsute externally except in the strongly infolded plait; the border half an inch in diameter when fully expanded, 5-lobed, rarely 6-lobed; the lobes

ovate-rotund, slightly repand or undulate. Stamens inserted on the middle of the tube; filaments very short; anthers somewhat sagittate. Pistil glabrous; style longer than the ovary and the stigma; the latter is as thick as the ovary or thicker, very obtuse or retuse and naked at the apex.

~~Polemoniaceae~~

~~Polemonium canadense, Linn.~~ (Thunb. Fl. Jap. p. 87;
 DC. Prodr. 9. p. 317; Ledeb. Fl. Ross. 3. p. 83.)

215

Gentianaceae

Gentiana Thunbergii, Griseb., in
Ab. Prodr. 9, p. 108; Sieb. & Zucc., l.c., p.
34; Gray, l.c. G. aquatica, Thunb.,
Ericalia Thunbergii, Don, Hakodadi;
on hillsides.

Depauperate specimens, only an
inch and a half high, including the
flower, which is greenish.

Menyanthes trifoliata, Linn.;
Ledeb. Fl. Ross. p. 76; Trautv. & Meyer,
Fl. Ochot. p. 68; Gray, l.c. Hako-
dadi, in marshes and ditches.

Apocynaceae

Malonea Asiatica, Sieb. & Zucc.,
Journ. Bot. Jap. 2, p. 39.

Parechites Thunbergii; scandens,
foliis lanceolato-oblongis ellipticisve

Papirus cum acumine obtuso;
~~lobis~~ laciniis calycis nec carinatis
 nec ciliatis, singulis glandulis 2
 squamiformibus truncatis pec-
 tinato-3-6-fidis auctis; corolla alba
 marcescente, limbo tubo ~~sub~~ paullo
 longiore; antheris basi biaristulatis.
Nerium divaricatum, Thunb., Fl. Jap.
 p. 110, non Lin. *Malonetia*
Asiatica, Sieb. & Zucc. Jam. Bot.
Fl. Jap. 2. p. 39. Simoda, on
 hillsides, scandent on the trunk
 of trees.

Zuccarini had not the fruit
 of this plant, or he would not
 have referred it *Malonetia*. I have
 it, with ~~scarcely~~ immature fruit
 from the Leyden herbarium, and
 apparently the same thing from
 Ousima and the Bonin Islands,
 with mature fruit. The follicles
 are those of an *Echites*, ~~from 4 to~~
 6 inches in length, linear, glabrous.

Seeds linear-cylindrical, smooth,
 half an inch long, lightly sul-
 cate or one-nerved on the ventral
 face, the upper end bearing a
 long and copious white coma.
 Embryo nearly the length of the
 rather abundant hard-fleshy albumen;
 cotyledons ^{broadly} linear, flat, folia-
 ceous, many times larger than the
 superior radicle. As to the flowers,
 the hypocrateriform corolla has an
 open throat, with a short and slightly
 projecting ^{and bearded} ridge ~~in it~~ behind each
 anther; the lobes dilated-cuneate and
 very oblique, very veiny, about 5 lines
^{in estivation} long, ~~sinistrorsely~~ ^(sensu banderlini) convolute.
 Anthers ^{nearly} sessile just
 below the throat, sagittate-lanceolate,
 rigid, their acute tips projecting a
 little beyond the throat; the base
~~on each side extends~~ ~~extends~~ produced
 from each margin into a short
 incurved cusp or awn. Disk or
 nectary of 5 oval obtuse fleshy scales,

215
(more or less)
pointed at the base ~~or~~ nearly ~~distinct~~
distinct, ~~as~~ nearly as long as the
glabrous ovaries. Style slender,
with a clavate-thickened ~~sum~~ or tur-
binate summit ^{and} ~~which~~ bearing a
narrow annular indusium which
closely girds the base of the conical
and pointed stigma, to which the
anthers adhere. This indusium
or ring ~~below the~~ is not conspic-
uous and so closely girds the
proper stigma that it was overlooked
by Ruccarini. The plant is evi-
dently a congener of Miguel's Par-
echites Borneana; but it scarcely
differs from Echites itself, except in
~~the above~~ wanting the umbrelli-
form reflexed membrane below the
stigma.

217

Asclepiadacea

Nerthoxium Japonicum,
Morr. & Decaisne in Ob. Prodr., 8. p.
324; Hib. & Zucc. l.c. Simoda;
in sand near the sea. Tanega-
sima, J. Small.

Oleaceae

Ligustrum Japonicum, Thunb. Fl.
Jap., p. 17, t. 1; Ob. l.c.; Hib. & Zucc. l.c.
Simoda; in fruit. &c. -

Ligustrum Itoa, Hib.; Hassk.;
Hib. & Zucc. l.c., p. 43. Simoda;
on hills. In flower.

Fraxinus Sieboldiana, Blume,
Mus. Bot. Lugd.-Bat., 1. p. 311; Gray,
l.c. Simoda; a low shrub. In
fruit.

218

Phytolaccaceae.

Phytolacca Kämpferi (sp. nov.);
caule sulcato; foliis ovalibus ovatisve
undulatis; racemis ^{erectis} breviter pedunculatis
confertifloris, folio brevioribus; pe-
dicellis floribus ^{altis} subduplo longioribus;
staminibus stylisque 8; carpellis leviter
coadunatis toro cylindraceo ^{impositis,} ~~insertis~~
~~infructu~~ ^{maturis} tenuiter baccatis. — Jamma
Gobo, Kämpf. Anan. Ext. p.
830, cum ic. Phytolacca octandra,
Thunb. Fl. Jap. ^{Sieb. & Zucc. l. c. p. 58;} p. 189, non Linn.
Slope Point, on the west coast of
Jerro, J. Small.

The specimens are in flower;
but I have it in fruit also from
the Leyden Herbarium, under the
name of Phytolacca octandra. To
P. octandra Linnæus and all
subsequent authors have referred
Kämpfer's plant, because it is octan-
drous, and because the inflorescence

as represented in his figure appears to be spicate. But Kamppfer describes the flowers as borne on pedicels of half an inch in length; they are from 3 to 5 lines long in our specimens, mostly twice the length of the slender subulate bracts. The leaves are large, 6 to 9 lines long, and broader than those of *P. decandra*, which our plant ^{much} ~~most~~ resembles in aspect, except that the racemes are denser, shorter, and less peduncled. The filaments, also, are broader, dilated below, and rather longer; and the gynaeceum is raised upon a short-columnar stipe, ~~scarcely~~ ^{scarcely} half the length of the ovaries. These are lightly united in the axis but scarcely so by their contiguous sides; in fruit they are almost distinct, and have only a thin pulp around the large, and black, shining, but somewhat rugose, round-reniform seed. Styles rather

shorter than the ovary, straight,
 stouter than those of *P. decan-*
dra. ~~In the gynaeceum this~~
~~species makes a~~ Intermediate
 as this species is between *P. decan-*
*dra** and *P. dodecandra*, it evidently
 destroys Moquin-Tandon's genus
Pircunia.

* *P. decandra* is described as having
 a sulcate stem; this is not usually the
 case in the United States. *P. acinosa*, Roxb.,
 therefore does not differ in this respect.
 I have not seen the Nepalese plant.

211

Polygonacea.

Rumex Acetosella, Linn.; var.
angustatus, Meism. in Ob. Prodr. 14,
p. 65. Hakodadi; common.

Polygonum perfoliatum, Linn.,
Thunb. Fl. Jap. p. 168; Meism. in Ob.
Prodr. 14, p. 132. P. chinense & L.
Thunbergii, Gray in Perry, Jap. Exped.
2. p. 516. Simoda; in valleys.
"Flowers pink."

The mature fruit is ovate-
globose and with hardly a trace
of the three angles, fully a line and
a half in diameter. In the ac-
count of the plants of Perry's Expe-
dition, very young specimens of
this, ~~were~~ ~~are~~ destitute of prickles, were
mistaken for a form of P. chinense,
and thus were mistaken for P. Thun-
bergii, which still remains obscure.

Fagopyrum esculentum, Moench;

Meisn. in Pl.asiat. Rav. 3. p. 63. &
 in D.C. l.c. ^{*H. emarginatum?* Gray in Perry's Jap. Exped. l.c.} *Polygonum* ~~*Haydeni*~~ =
~~*simoda*~~ ^{*simoda*} *rum*, Linn.; Thunb. Fl. Jap. p. 169,
 valleys, low grounds, fields, and
 waste places, spontaneous, and ap-
 parently indigenous.

Thymelaeaceae.

Daphne Pseudo-Mezereum (sp. nov.)
 foliis sparsis lanceolato-oblongis
 seu lato-lanceolatis plerumque
 obtusis basi in petiolum attenu-
 atis sublus pallidis tenuiter venosis,
 deciduis; floribus ^{plerumque} ramulos laterales
 brevissimos terminantibus vel ² basi
 ramorum horum terminorum ortis; brevis-
 sime pedicellatis; seminibus exalbumi-
 nosis. — Simoda, on hill sides, in
 shady woods.

The specimens, gathered between
 the 19th and the 25th of ^{May} ~~June~~, are already ⁱⁿ ~~ripe~~ ^{ripe} fruit. The berries are said
 to be red, and the ~~shrub~~ plant to form
 a low shrub, from one to three feet
 high. Although the leaves are apparently
 a little broader and blunter and more
 distinctly petioled than those of the
~~Asiatic~~ European and Siberian *D.*

210
Mezereum, it is only by the influence that, with the present imperfect specimens, I am able to distinguish the species. The flowers are unknown, but from the fruits it is plain that they were mostly produced upon ^{the summit of} short lateral spurs, ~~of the preceding year~~ which have mostly borne leaves the preceding year; and some were borne, in the manner of our Dirca, at the base of a leafy branch of the season; i.e., the spur has ~~developed~~ been continued by a terminal bud into a vigorous branch. The berries are on a very short, but manifest, pedicel; they are ~~oval~~, ~~and~~ oval, and as large as those of D. Mezereum. The seed shows no vestige of albumen. This is the only Thymelaeaceous plant in the collection from Japan, whence half a dozen other plants of the family are known, among them the Daphne odora.

Elaeagnacea.

Elaeagnus macrophylla (Thunb., Fl. Jap. p. 67): ~~pubescens~~ ^{arborescens} ~~pubescens~~ ^{inermis} ~~pubescens~~ ^{coriaceis}; foliis rotundato-ovatis ovalibusque supra late viridibus lucidis subtus argenteis; floribus in axillis paucis argenteo-^{quam pediculis longioribus} et ferrugineo-lepidotis; perigonii ~~limbo~~ ~~oblongo~~ campanulato tubo ellipsoideo sub limbo oblongo-campanulato longius quasi rostratum constricto, lobis triangulari-ovatis, disco vix prominulo; stylo glabro; fructu baccato ovali. — Kago-sima Bay, Kiu-siu;

on shaded hillsides.

Leaves 2 to 3 inches long, $1\frac{1}{2}$ to 2 inches broad, rounded at the base, ^{more coriaceous than those of E. latifolia} ~~veiny~~ and remarkably smooth and shining on the upper surface, which contrasts strongly with the shining silvery lower surface. Baccate fruit (in Dr. Morrison's specimens) three fourths of an inch in length; the stone oblong. This is doubtless Thunberg's E. macrophylla, and perhaps his E. glabra also. The latter, with "peduncles shorter than the flowers, ~~can~~ and the leaves rufescent-squamose beneath, can hardly be the following.

Elaeagnus longipes (sp. nov.): arborescens; ~~inermis~~ ^{inermis}; ramulis angulatis ferrugineo-lepidotis; foliis membranaceis ovali-oblongis cum acumine obtuso basi acutis supra glabris (junioribus lepidibus paucis parvis ~~can~~

caducis conspersis) subtus cinereo-
argenteis; pedunculis solitariis cla-
vato-filiiformibus sesquipollicaribus
flores multoties longioribus; perigo-
nio cum pedunculo ^{nunc} articulato,
tubo fusiformi sub limbo cylin-
draceo lobis ovatis dimidio longioribus
~~constricto~~ attenuato-constricto, -
sinoda; in thickets on hill sides,
J. Small.

"Shrub 14 feet high," Leaves
2 1/2 or 3 inches long, the larger ones
an inch and a half broad, thin,
the scurf beneath very fine, close, and
grayish, with little ~~lustre~~ lustre,
a few scattered scales turning brown-
ish; petioles 4 or 5 lines long. Pedun-
cles axillary or extra-axillary towards
the base of the leafy branchlets
of the season ^{single} "silvery lepidote-cones-
cent, gradually thickened from the
near the filiform base to the apex,

an inch and a half long in the specimens, from which upper part of the perigonium has mostly fallen from the forming fruit; the latter tipped with an apiculation which is fully a line long, its scurf turning ferrugineous. Tubular part of the limb of the perigonium nearly 3 lines long; Disk obsolete. Anthers glabrous. Style filiform, glabrous, but with a few scattered tufts of stellate pubescence. — The specimens of this plant are not complete: but there is no described species like it.

Elaeagnus umbellata, Thunb.

Fl. Jap. p. 66, t. 14; Gray, l. c. E. multiflora & E. pungens, Thunb. l. c.? E. parvifolia, Royle Ill. Himal. p. 323, t. 61. Takodadi; in blossom. Kagosima Bay, Kiu-siu; in fruit.

The specimens from Hakodadi, ~~some~~ ~~those~~ with elliptical, but most of them with lanceolate-oblong leaves, thoroughly accord with ^{various} Simalayan specimens. Those from Kin-siu approach ~~at the plant~~ those which I had formerly referred to *E. purgens*, Thunb.; but the latter are more ferrugineous, and have nearly orbicular calyx-lobes. The leaves vary greatly in size, but are all larger than in Thunberg's figure.

Santalacea.

Thesium decurrens, Blume,
in A. DC. Prodr. 14, p. 65. *T. australe*,
Hort. & Arn. Bot. Beech. p. 270, vix R.
Br. *T. alpinum?* Gray, l. c. Simoda;
along hills and by road-sides.

The Japanese specimens belong to the same species with those from the Loo Choo Islands (the var? *longibracteatum*, A. Dc. l.c.): in both the bracts are just like the cauline leaves and the bractlets sometimes equalling, sometimes much surpassing the flowers. The flower is not ~~axillary~~, but in the axil, but its short pedicel is wholly adnate to the base of the bract. The lobes of the perigonium are not "*medio-utrinque dentatis*"; in which respect it differs from the character of *L. australe*,

227

Lauraceae

Campshora officinarum, Bauhin; Nees, Syst. Laur. p. 88; Sieb. & Zucc., Jam. Bot. Fl. Jap. 2. p. 78. Laurus Campshora, Thunb. Fl. Jap. p. 172. Simoda.

Benzoin sericeum, Sieb. & Zucc. l. c.; var. foliis ^{max} glabris nisi ad margins costamque parce sericeo-pilosis. - Hakodadi; on shaded hills.

Litsea glauca, Sieb.; Nes., Syst. Laur. p. 133; Sieb. & Zucc. l. c. Laurus glauca, Thunb.

Saururaceae

Houttuynia cordata, Thunb. Fl. Jap. p. 234, t. 26. Simoda along rivulets. "styles 2 or 3",

1

211

Chloranthaceae

Chloranthus serratus, Koem. & Schult., Syst. Veg. 3, p. 461; Blume, Chloranth. Fl. jav. p. 10. Nigrina serrata, Thunb. in Act. Upsal. 7, p. 142, t. 5, f. 1. Shady hills, Simoda. Also on wooded mountain-sides, near Hakodadi, J. Small.

Thunberg's brief account leaves some doubt as to whether this is his plant; but it is clearly the species described under this name by Blume, from specimens communicated by Siebold. The stems are naked below in the manner he describes, the about ^{lower nodes} ~~three elongated lower inter-~~ nodes bearing a pair of small clasping scales in place of leaves, and separated by internodes of from $1\frac{1}{2}$ to 4 inches in length. At the summit ^{from one to} ~~two or~~ three, generally approximated, nodes (separated by internodes

varying from two lines to an inch,
 or occasionally the lowermost two
 inches in length) are leaf-bearing.
 The stems are perfectly simple, ~~and~~
 and ~~arise singly~~ herbaceous, and
 arise singly or in clusters from
 a horizontal rhizoma, thickly
 beset with coarse fibrous roots.
 Leaves thin and membranaceous,
 green both sides, ~~slightly~~ paler but
 not glaucous beneath, glabrous, as
 is the whole plant, ^{veiny,} ovate or oblong-
 ovate, and mostly acuminate,
 from 4 to 6 inches long, sharply but
 not doubly serrate with mucronate
 tipped teeth. The base abruptly
 contracted into a somewhat margined
 petiole of about half an inch ^{is}
 length. Stipules minute, subulate,
 deciduous. Inflorescence terminal,
 much shorter than the leaves, short
 peduncled, consisting either of a
 single filiform spike, or forked, or

sometimes branched into 3 or 4 such slender spikes. Flowers essentially like those of *C. officinalis* and *C. indicus*. Androecium fleshy, hooded around the pistil, three-lobed, the lobes oval, very obtuse; anthers small in proportion, affixed near the base of the lobes; those of the lateral lobes one-celled, of the middle one two-celled. ~~These~~ ~~clearly are~~ The anthers manifestly belong to three stamens, of which the middle one is complete, and the lateral bear only half-anthers.

Sarcandra of Garder and Wright differs from *Chloranthus* only in the total suppression of the lateral stamens, and ~~probably is~~ will not vindicate its claim ~~as a~~ to the rank of a genus, ~~as Brown has perceived in marking an unpublished species~~ ~~*C. sarcandra*~~, as Brown has

clearly foreseen, having noticed that *C. monostachys* in the same spike sometimes wants and sometimes possesses the lateral ~~an-~~ ^{stamens}. *Sarcandra chlo-*
ranthoides of Gardner is most likely the *Chloranthus brachystachys* of Blume and perhaps *C. monander* of Brown.

Tricercandra quadrifolia (Gray in Perry, *Jap. Exped.* 2. p. 318); ^{in di-}foliis ^{ovalibus} semper 4 ad apicem caulis, quasi verticillatis; Stamine intermedio anthero. — *Bladhia glabra*, Thunb. in *Linm. Trans.* 2. p. 331? ergo *Andisia glabra*, A. DC.? — Itakodadi, in shady places; June, in blossom.

The abundant additional specimens of this very interesting plant accord with those upon which the genus was founded, except that they are commonly larger, being ~~more~~

fully developed, the tallest stems
 being a foot and a quarter high,
 but this length ~~contains~~ occupied
 by only three or four internodes;
 and the leaves which when they
 first unfold are only an inch and
 a half long, become 3 or 4 inches
 long and 2 or 3 broad in the more
 vigorous specimens. They ~~greatly~~
 resemble those of *Chloranthus ser-*
vatus, and indeed the ~~habit of the~~
 two plants are much alike in
 habit and mode of growth, but
 the simple stems spring from a
 more slender rootstock, and ~~there~~
~~are~~ ~~uniform~~ the leaves are uniformly
 four and quasi verticillate. The
 tail-like ^{which are tardily deciduous,} stamens, are said to be
 white ^{in a single instance the vestige of an anther was detected upon} in the living plant. The style
 is manifest, although very short. The
 fruit is still a desideratum: it ~~is~~
 probably ~~like~~ resembles that of *Chlo-*
ranthus. In ~~distinguishing~~ form-
 ing a genus upon this plant, I

relied much upon the order of suppression of the anthers, which here is the opposite of that of *Chloranthus* and *Sarcandra*, the intermediate stamen being an antherous instead of complete. But since the publication of the genus, Dr. Hooker has kindly sent me a sketch and a blossom or two of an allied species, which annihilates this distinction while it confirms the genus, ~~The diag~~ — leaving the character to rest upon the remarkable form of the stamens, or their appendages, and upon the presence of a style. The diagnosis of the second species is subjoined.*

* *Triceneandra Fortunei* (sp. nov.): foliis oblongis b. subdistantibus, i.e. internodiis duplo longioribus; stamine intermedio anthera biloculari, lateralibus antheris ~~bilocularibus~~ unilocularibus instructis; stylo magis producto. — In China boreali. Fortune. (Hab. Hook.)

Callitrichaceae

Callitriche verna, Linn., Simoda
and Hakodadi; in wet places.

Euphorbiaceae.

Pachysandra terminalis, Sieb. &
Ruce, Ham. Bot. Fl. Jap., 1. p. 34. On
the summit of mountains northeast
of Hakodadi; in dense shade of trees
and bushes.

A most interesting addition to a
genus ^{which} ^{was known} before, only P. procumbens,
Michx., of the western slope of the Alle-
ghenies. The Japanese species is
well marked by its solitary and termi-
nal spike.

Gaultheria Nishikienensis, Night.,
Le. t., 1878 & 1879; Benth., in Kew. Jour. Bot.,
6. p. 8. Hills near Simoda.

An erect, branching shrub, 4 to
10 feet high. New to the Japan Flora;

common at Kuy Kong; also found
by Mr. Wright upon ~~Katomasima~~
Katomasima, one of the northern
Loo Choo Islands.

Euphorbia palustris, Lin. m.; Sedeb.
Fl. Ross. 3. p. 568. Itakodadi; on the
sandy shores of the bay.

Euphorbia Guiljelmi (sp. nov.);
glaberrima; caule 1-2-pedali & rhizo=
mate repente; umbella 5-6-fida, radiis
dichotomis; foliis ^(sessilibus) subtus glaucescen=
tibus integerrimis obtusis vel retusis,
caulinis sparsis oblongis seu spatulato-
oblongis basi attenuatis, involucralibus
~~elongato-elliptico-oblongis~~ conformibus
sed paullo majoribus basi obtusioribus,
involucellis deltoides ^{imise} ~~seu~~ triangulari-
oblongis, ultimis acutis, omnibus longi-
oribus quam latioribus; glandulis
lunatis ^{et sub-parapetale} large bicornibus; capsula

2

(*seminibusque glaberrima*) *laxibus*,
— (Yokohama, Dr. H. N. Williams,
Hillsides, Simoda; and mountains
east of Hakodadi,

A few fragments of this species,
as well as of the foregoing, were in Drs.
Williams and Morrow's collection, but
too imperfect for determination. The
complete specimens in Wright's collection
show the present plant to be an undes-
cribed species, of the *Esula* section,
allied to *E. Esula* itself. But the
leaves are larger and blunter; the cauline
from $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long and more
than half an inch wide, apparently
bright green above but ~~pale beneath~~
glaucescent underneath; the involucral
ones rather larger and more elliptical,
sometimes nearly 3 inches in length.
Involucels all green and foliaceous;
the largest ^{of the leaves} an inch and a half long,
and with the ^{abruptly} dilated ~~of somewhat oblique~~,
~~truncate or broadly subcordate~~ base almost

an inch broad, ^{2.5}either truncate or
obscurely subcordate, and somewhat
oblique; the uppermost ones broadly
ovate-deltoid, acute, and about three
fourths of an inch long. Glands
of the ^{sessile} involucre brownish, similar
to those of *E. Esula* but with longer
and almost parallel subulate ap-
pendages. Capsule deeply 3-lobed;
the cocci perfectly smooth and gla-
brous, not at all carinate. It is
perhaps most nearly allied to *E. lep-
tocera*, Engelm., from California.

24

Urticaceae.

Laportea bulbifera, Sieb. & Zucc.
Fam. Nat. Fl. Jap. 2. p. 90 (sect. Urtica);
Medd. Mon. Urtic. p. 139. Iwakodaki?
in shady places. J. Small.

I cannot complete the account of
this species; ~~for the fertile flowers on~~
account of the ^{the} imperfection of the two
specimens. ^{The plant is said to be 6 feet in height} There are scarcely any in-
dication of ^{the} bulblets described by Zuccarini.
The leaves resemble those of L. Cana-
densis, except that they are mostly
subcordate, and with ~~with~~ much coarser
and sharper teeth, and a caudate
acumination, approaching in these
respects the leaves of Urtica Thunber-
siana, Sieb. & Zucc. (which, by the way,
is very distinct from U. dioica). Male
flowers like those of L. Canadensis
but smaller. Female flowers in
nearly simple and slender spikes
which are solitary in the upper

axils; their pedicels very short and articulated! Perianth of the female flowers, sometimes two-parted as described by Ruesscarini, sometimes almost equally four-parted; the laciniae ovate or obovate, hairy on the thickish midrib, and with scarious margins. Stigma long and filiform, very villous. Fruit and pedicels inflorescence not seen. A peculiarity of this species, in which it accords with *Fleurya*, is, that ^{(the pedicels of the} the female flowers are articulated, as distinctly as those of the male flowers.

Debregeasia edulis, Meddell.
Mon. Artic. p. 462. *Morocarpus*
edulis, Sieb. & Zucc. l.c. p. 94. *Blume*,
Mus. Bot. Lugd.-Bat. 2, p. 155. t. 16.
Mississya parvifolia, Medd. in Ann.
Sci. Nat. Simoda, on hill sides.

This was inadvertently named *Boehmeria nivea*; in the account of the plants

24
of Perry's Expedition.

Celtis sinensis, Pers. Syn. 1 p.
292; Mume, Mus. Bot. Lugd. Bot. 2 p.
70. C. orientalis, Thunb. C. Willde-
nowiana, Roem. Schult.; Sieb. & Zucc.
l.c. p. 98; Gray, l.c. Simoda (in
fruit).

A spreading tree, of twenty feet
or more in height.

Morus alba, Linna.; Thunb. Fl. Jap.
p. 71; Ledeb. Fl. Ross. 3. p. 643. Hill sides,
Simoda (A spreading bush, with purple
fruit); Itakodani (a tree ^{to 30} ₁₅ feet high) &
Volcano Island, &c.

(Kampff. Amoen. l.c. p. 804)
Ficus erecta, Thunb. in Linna.
Trans. 2. p. 327; Kampff. l.c. ed.
Banks, t. 4; Sieb. & Zucc. l.c. Kiu-
sin; creeping over rocks.

~~Probably only a variety of F. pumila,
Thunb. as Thunberg at first regarded it.~~

Ticus

Ticus

200

244

Erylandacea

Pterocarya sorbifolia, Sieb. & Zucc.
Fam. Nat. Fl. Jap. 4, p. 33. Nakodadi;
apparently indigenous.

This, according to Mr. Wright, is
a tree, of 20 to 40 feet in height, widely
branching. ~~Stems deep green~~ ~~Stigmas 2~~,
deep crimson. — This may be the
Eryland nigra of Thunberg, although
Ruessarii mentions three ^{Japanese} ~~species~~
of Eryland. In the foliage, &c. our
specimens ~~are~~ seem to be interme-
diate between Ruessarii's two species;
for the leaflets are rather oblong than
lanceolate, ~~scarcely~~ 3 to 5 inches long,
and often two inches broad, and not
long acuminate, and ~~scarcely~~ much as
P. sorbifolia is described. But they are
^{very} ~~fertile~~ ^{benefact}, and slightly ^{or above}, ~~they~~
fertile spike is only 3 inches long, and
such of the small deciduous bracts
as remain are also tomentose. Perhaps
all are forms of one species. The pith
is divided into plates. Sterile racemes
from 5 to 7 inches in length.

24

Cupulifera.

(& Zucc. Fl. Jap. t. 475)

Quercus cuspidata, Thunb. Fl. Jap. p. 176, Sieb. & Zucc. Fl. Jap. 1. p. 8. t. 2. Hillsides, Simoda; "a small, spreading tree." Also on mountain-sides "a large tree". J. Small.

(cum petiolis 2-3 lin. ~~longis~~ longis)

Quercus phylliræoides (sp. nov.) ramulis novellis, gilvo-tomentellis; foliis coriaceis perennantibus ellipticis oblongisve ~~per~~ rarius subobovatis obtusiusculis (1-2-pollicaribus) basi rotundatis ~~super~~ ~~in~~ ultra medium subserratis glabris, novellis subtus vel costa utrinque purpureo-tomentellis ~~tubosis~~ ^{filiformibus} venis divergentibus inconspicuis; amentis masculis ^{filiformibus} laxis; floribus 4-5-andris; cupula crateriformi albido-tomentosa (squamis brevissimis arcte appressis) glande multo brevior. — Simoda (Drs. Williams and Morrow, in flower only); on hillsides, Tanegashima.

We had this from Drs. Williams and Morrow with male flowers only. Mr. Wright gathered it in the

same state, and also secured the remains of cups and acorns of the preceding year. It is a shrub from 6 to 12 feet in height; and the foliage ~~in aspect~~ seems to be ~~somewhat~~ intermediate in aspect between *Q. Ilex* and *Q. coccifera*. The leaves are rarely quite entire, generally with 3 or 4 small and appressed mucronate teeth on each margin toward the apex, occasionally more strongly serrate almost to the base. Cupules ~~apparently~~ almost sessile, shallow, a third of an inch in diameter; the acorn apparently rather more than half an inch long. Fertile flowers few, terminating on ~~pedicel~~ axillary peduncle which does not exceed the petiole.

This is certainly none of the species described by Blume.

Quercus glandulifera, Blume,
Mus. Bot. Sing. Bat. 1, p. 295. Sinoda,
on hills; a spreading bush.

Quercus dentata, Thunb. Fl.
Jap. p. 177, & Le. Pl. Jap. t. 46; Blume,
l.c. Hakodadi; a large tree in
low grounds. J. Small

Accords with Blume's specimens
and with Thunberg's character; but
the figure of the latter represents the
leaves much too narrow.

Quercus grosseserrata, Blume,
l.c. p. 306, ex char. Hakodadi;
on hillsides.

Blume describes sterile speci-
mens only. His name and descrip-
tion well apply to our plant, which
exhibits female flowers and vestiges
of former fruit. ^{and an equally similar} The leaves resemble
those of *Q. crispula*; Blume, ^{but}
^{they} are larger (the amplest 7 inches long
and about 5 wide), whitish beneath,
and the numerous more simple, ~~and~~
prolonged, and acute, some of them
an inch in length. Female flowers

257
either sessile in the axils of the leaves,
or scattered along a short and slender
peduncle. Cupule between
saucer-shaped and hemispherical,
from two thirds to three fourths of an
inch in diameter, thick, rough or
tuberculate with the short and ap-
pressed scales. Acorn unknown.
The plant is said to be a small,
spreading tree; from 10 to 20 feet
in height.

Quercus urticifolia, Blume,
l.c.; var. foliis angustioribus acu-
minatis subtus albidis. - In
mountain vales near Simoda, J. Small.
A tree, 30 feet high; only a
leafy branchlet with fertile flowers,
and the bur-like cupules gathered.
The latter ~~resemble~~ are like those of *Q.*
serrata, but larger, over an inch
in diameter, at first densely clothed
with long and rigid ^{straight} tuberculate scales;
at length the developed fructiferous cups
become saucer-shaped and squarrose
with the ^{recumbent} bases or vestiges of the ~~acorn~~
~~same~~ scales. The specific name is
by no means appropriate.

Quercus serrata, Thunb. Fl. Jap.
p. 176; Sieb. & Zucc. l.c.; Blume, l.c.
Simoda; on hillsides.

"A slender tree, 10 to 20 feet in
height." With female flowers and old
fruit.

Castanea Japonica, Blume, Mus.
Nat. Legd.-Bat. l.p. 284. C. vesca,
var. pubinervis (Harkn.), C. crenata, &
C. stricta, Sieb. & Zucc. l.c. Simoda,
on wooded hills.

"A shrub or small tree, 6 to 14
feet high." Blume characterizes
twelve varieties of the Japan Chest-
nut, some of them cultivated forms.
Our numerous specimens appear as
if distinct from ~~the European and~~
~~American species~~ C. vesca, although
no decisive characters ^{are observed} ~~are observed~~
The spikes as well as the leaves are
smaller, and the latter are often
canescent beneath, sometimes almost
as much so as those of C. pumila.
They approach the European rather
than the American form of C. vesca,
in this respect, and in ~~having~~ the glan-

ular dots which are more or less apparent. The bur resembles that of the common Chestnut. The Japanese species seems to be the analogue both of *C. vesca* and of our *C. pumila*, both restricted to the eastern part of North America. There appears to be no representative of it in Central Asia,

Fagus sylvatica, Linn.; Ledeb.
Fl. Ross. 3. p. 543. *F. ferruginea*,
Sieb. in "Bot. Verh. 12. p. 25." *F. ore-*
nata, Blume, l.c. p. 307. On moun-
tain-sides, Itakodadzi, and the vicinity.

"A large, spreading tree"; in fruit,
I see nothing to distinguish the species
from the European *F. sylvatica*, which,
however, does not penetrate far east-
ward into Asia. There is no Beech known
in Western North America.

Betulaceae.

Alnus (Ahraster) firma, Sieb.
& Zucc. Ham. Nat. Fl. Jap. 2. p. 105.
Betula carpinifolia, Sieb. & Zucc. l.c.?
Simoda: a shrub or tree, on hill-
sides.

The specimens are in fruit, as

is that ~~received~~ from the Leyden Herbarium. The foliage and also the ^{female aments} young fruit would be mistaken for those of a Birch: indeed I believe it is Ruessari's *B. carpinifolia*. The female scales are three-lobed at the summit; the middle and rather larger lobe free ~~at the summit~~ from the summit ~~a thickened adaxial~~ of the thicker internal portion ^{which} is emarginate or slightly two-lobed: so that the mature scales bear five short exserted lobes at the thickened summit, two of them more internal. There are only two flowers to each scale, forming oval achenia with pellucid wings of variable breadth; and the scales are persistent, at length reflexed or widely spreading. Male flowers not seen.

Alnus (*Alnaster*) *viridis*, Wb.; Cham. ~~etc.~~ *Betula viridis*, Vill., *Alnaster viridis*, Spach, *A. pilicossus*, Ledeb. Fl. Ross. 3. p. 655. Hakodadi; in valleys, J. Small.

222 upon the ticket)
According to Mr. Small's note
this forms "a tree, 40 feet high";
There is no doubt as to the species.

Alnus Japonica, Sieb. & Zucc,
l.c.; var. foliis praesertim novellis ~~pubescentibus~~
~~rescentibus~~ ramulisque pubescentibus,
Itakodadi; in marshes.

A spreading bush, 6 to 12 feet
high. Incomplete specimens, with
oval oblong or oblong-lanceolate leaves,
and thick, oval fruiting aments,
and wingless, slightly margined
achenes; probably referable to *A.*
Japonica.

Salicinae,

Salix ^{me.} ~~Sieboldiana~~, Blume, *B. J.*
p. 517. Hillsides, Simoda and
Itakodadi; in fruit.

July 11, 1891

55
Conifera.

Pinus Massoniana, Lamb.

Pin. t. 12, ed 2, l. t. 8; Sieb. & Zucc. Fl.
Jap. 2. p. 24, t. 113, 114; Encl. Syn.
Conif. p. 174. P. sylvestris, Thunb.
Fl. Jap. p. 274. Kiu-siu; on hills,
(A tree 40 to 60 feet high.) (and Simoda)

Pinus densiflora, Sieb. & Zucc.
l.c. p. 22, t. 112; Encl. l.c. p. 172,
Simoda; on hill sides (6 to 12 feet high).

Cryptomeria Japonica, Don; Sieb.
& Zucc. l.c. p. 43, t. 124. Cupressus
Japonica, Linn. f.; Thunb.

Chamaecyparis (Retinospora) pisifera,
Sieb. & Zucc. in Encl. l.c. Retinospora
pisifera, Sieb. & Zucc. Fl. Jap. 2. p. 39,
t. 22. Simoda; on hills.

Retinospora obtusa, Sieb. & Zucc., is
probably a mere variety of R. pisifera.

Juniperus rigida, Sieb. & Zucc.,
Fl. Jap. 2. t, 125, & Ham. Bot. b. c. p. 109;
Endl. Syn. Conif. p. 17. ^{J. communis, Thunberg.} Simoda;
a low, spreading shrub, on hillsides.

Juniperus laxifolia, Hook. & Arn.
Bot. Beech. p. 272; Sieb. & Zucc. l. c. p.
109. Cape Arisaki, Yesso, J.
Small. Also Tanegashima.

"A low, creeping shrub, running
over the ground on open plains and
hills. ~~Fruit~~, as in ~~the~~ Lov Chor
and Bonin specimens, nearly half
an inch in diameter when full
grown. - This species has not before
been recorded from Japan.

Juniperus chinensis, Linn.;
Sieb. & Zucc. l. c. & Fl. Jap. 2. t. 126, 127.
J. Barbadosis & Virginiana, Thunb.
Fl. Jap. p. 264. J. Thunbergii, Hook.
& Arn. Bot. Beech. p. 271. Simoda;
on hills, (Exet, 10 to 25 feet high.)

Like *J. Sabina* and our *J. Vir-
giniana*, ~~this tree~~ this has a diffuse
or procumbent variety. If *J. Sabina*
includes *J. Virginiana*, as Sir Wm
Hooker thinks it should, it will like-
wise include *J. chinensis*.

Cephalotaxus drupacea,
Sieb. & Zucc. Fam. Nat. Fl. Jap.
2, p. 108; Endl. l.c. p. 239, *Taxus*
baccata, Thunb. ex Endl. Simoda;
in thickets: a tall, slender tree.

Torreya nucifera, Sieb. & Zucc.
l.c.; Endl. l.c. p. 240. *Taxus nuci-*
fera, ^{Kampfer Amam. Exot. p. 814, 815, l.c.;} ^{on hills,} *Simoda;* *J. Small.*
bonif. t. 2, f. 3.

Only a branchlet or two was
gathered. "Plants either small bushes or
large trees; no fruit or flowers seen".
But the leaves, with their two impressed
brownish lines underneath suffice

for identifying this interesting ~~plant~~
~~tree~~. The distinctions between this
and the American species are ~~exceedingly~~
very slight; and the division of the
genus between North America and
Japan is ^{one of the most} striking and instructive
~~instances~~ of a considerable number
of similar instances.

207

Aroidea

Arisaema Thunbergii, Blume,
Rumphia, ^{Gray in Perry, Jap. Exped. 2, p. 319.} t. p. 105; Arum Dracontium,
Thunb. Fl. Jap. p. 233. Simoda; in
much shaded valleys. J. Small.

Five specimens of this remarkable
species were gathered by Drs. Williams
and Morrow; but only a faint one
in the present collection, which, however,
bears enough of the long, filiform tail
of the spadix ^{to} ~~for~~ identify the species.

Arisaema serratum, Schott.; Blume,
l.c.; p. 107. Arum serratum, Thunb. in
Linn. Trans. 2, p. 338, & Lc. Fl. Jap. t. 37. Simoda,
on shady hills.

Spadix and spathe dark purple; the
specimens not in condition to show whether
the former is much thickened upwards, as
in Thunberg's figure, or rather narrowed at the
apex, as described by Blume. If the former, the
plant is probably a mere variety of A. japonicum.

Arisaema Japonicum, Blume,
l.c. p. 106; Gray, l.c. Arum Dra-
contium, Thunb. Fl. Jap. p. 233. In
shady woods, Simoda; also a ^{smaller} ~~smaller~~ form
from ^{Itakodadi} ~~Itakodadi~~. J. Small.
One specimen with broader
leaves is apparently A. amplissimum,
Blume. ~~The plant~~ The smaller
form, from Itakodadi approaches the next,
but has a much ^{thicker} more clavate-thickened
spadix.

Arisaema latisectum (Blume,
l.c. ex char. imperf.): foliis pedati-
sectis, ^{foliolis} 5-17 ovali-oblongis oblongo-lan-
ceolatisve longius et acutissime acu-
minatis integerrimis laxe perru-
vatis et reticulatis, intermedio pe-
tiolulato, ^(nunc subsessili) lateralibus sessilibus at-
que uno latere adnato, decurrentibus
conformi; pedunculo elongato; spa-
dice super flores constricta deinde
in ~~appendicem~~ ^{clavam} cylindricam ob-
tusam ~~vix clavata~~ abrupte modice
incrassata; spathe viridi, limbo ex-
orato acuminato albo-purpureo
lineato. — Takodadi, in damp
and shady places. J. Small.

This is probably Blume's *A. latise-*
ctum, founded upon foliage only;
but its affinity is with *A. Japoni-*
cum, not with *A. Thunbergii*.
Indeed, it might be taken for a
slender variety of that species, with
a green spathe, and a long peduncle

(erected from 5 to 9 inches above the
upper leaf), except for the sterile ap-
pendage of the spadix, which is
much narrower and cylindrical,
scarcely if at all thickened upwards.

The lateral leaflets are almost all
rather strongly ^{the} adnate-decurrent on ~~one side~~ ^{the} the
rachis ^{(and the middle one equals the largest of the lateral} ^{in size} upon one side; ~~the~~

27

Arctio-dracon; Nov. Gen.

Spadix nudus, scapsum terminans, cylindricus. Flores hermaphroditi. Perigonium tetraphyllum; ~~phyllis~~ ^{sub} basi ovarii adnatum; phyllis obovatis membranaceis, ~~for-~~ ~~nicato~~ ^{sub} concavis. Stamina 4, perigonii phyllis opposita; filamenta ~~complanata~~ plana; antherae extrosae, biloculares, loculis ovalibus rima longitudinali ex apice fere ad basin dehiscuntibus. Ovarium ^{rarius abortu uniloculare?} biloculare, ~~triloculatum~~ stylus brevis, ^{conicus,} ~~con-~~ ~~crassus,~~ ~~conicus,~~ stigmate depresso simplici terminatus. Ovula in loculis solitaria, ~~at~~ dissepimento paullo ^{supra} ~~supra~~ basin inserta, horizontalia, orthotropa. Pericarpia ^{carnosa?} ~~laevata~~ ^{1-2-sperma,} super receptaculum spongiosum, ^{confusum} ~~vel car,~~ ~~connata,~~ stylo crasso-conico ^{coalescentia,} ~~ap-~~ acuto apiculata. Semina.

paludosa,

288

Herba boreali-Pacificæ, acaules,
foliis magnis integerrimis pen-
natis Symplocarpi cum scapo
elongato coetaneis, rhizomate
crasso horizontali; ^(ortis) spatha ~~mem-~~
~~branacea~~ radicali membranacea
e spadice remota vaginam me-
ram scapo conformem (Orontii
more) efficiente, seu ^(long) limbo
~~la~~ ovato-lanceolatum coloratum
basi convolutum ~~exsert~~ gerente.

Arctio drakon japonicum (sp.
nov.): foliis ovalibus oblongiore; spatha
nulla nisi vagina tenui basin
scapi cingente. — In fresh-water
marshes at Hakodadi: first collected
by Drs. Williams and Morrison.

Rhizoma thick, horizontal,
sending down ~~thickish~~ strong and
simple fibrous roots, just as in
Symplocarpus. Leaves like those
of Symplocarpus in appearance, but

oblong and acute ~~at the~~ or merely
 obtuse (not cordate) at the base,
 from one to nearly two feet long,
 and the larger 8 or 9 inches broad,
 mucronate; the stout conduplicate
 petiole ~~about~~ 6 inches long. Scape
 a foot or less in length, naked,
 except a thin sheath below the middle,
~~which is~~ like that of *Orontium*,
 which bears no dilated limb. Spa-
 dix cylindrical, $1\frac{1}{2}$ to 3 inches long,
 considerably thicker than the scape,
 densely covered with hermaphrodite
 flowers, of a greenish or yellowish color.
 Divisions of the perianth ^(4, when young) incurved
 over the stamens and stigma, obovate,
 obtuse, ~~rather~~ in texture resembling
 those of *Orontium*, not thickened ~~at~~
 or hooded at the summit like those
 of *Symplocarpus*, ^{persistent.} Stamens inserted
 at the junction of the perianth with
 the base of the ovary, included; the
 filaments broadly linear, and at first

not longer than the anther,
at length ~~twice or three~~^{considerably} elongated,
but scarcely at all exserted. Anthers
yellow, ~~extrorse~~^{innate} innate-extrorse,
with a narrow connective; the
cells oval, apposite, or their bases
slightly diverging, opening longitu-
dinally and extrorsely from the
apex nearly to the base. Ovaries
of the flowers all more or less conflu-
ent at their base with the receptacle,
but less so than in Symplocar-
pus, and ~~inserted~~ with the base of
the perianth more or less adnate
as far up as the insertion of the ovules,
2-celled; the cells small, filled with
clear jelly (as in Culla), and each
containing a horizontal orthotropous
ovule, which is attached to the partic-
tion near the base, so that the
two ovules are collateral and diver-
gent. Style thick, conical-oblong,
terminated by a depressed simple stig-
ma. Mature fruit and seeds

(probably one of the cells and ^{subs}~~ovules~~ abortive,
not seen; The immature fructifer-
ous spadix is ~~square~~ roughened
with the persistent styles slightly
projecting from the marcescent-
persistent perianths, and much
thickened so as at length to become
conical in shape; and the ovaries
have become more coalescent.
~~Whether both ovaries are fertilized, or~~
~~one of them and its cell is ~~supposed~~~~
~~aborts is uncertain; but there are~~
~~some indications that the seed~~
~~becomes pendulous.~~ The fruit is
likely to be much less thick and
fleshy than that of *Symplocarpus*.
~~The seed apparently is monitak, like the ovules.~~
Some leaves and a flowering spa-
dix of this interesting plant were
gathered by Drs. Williams and Mor-
row, but were passed over in the
^{brief} account of the botany of Perry's
Expedition. Mr. Wright's excellent
specimens gathered later in the season
(about the middle of June) enable

286
me to elucidate the species; although
mature fruit is still a desideratum.

Although I possess no specimens
of Linnaeus's *Dracontium Kamtschat-
cense* (*Symphlocarpus Kamtschati-
cus*, Bongard) for comparison, I have
no doubt of its being a true congener
of the present species: indeed the ab-
sence, as far as known, of a membra-
naceous stem-like spathe from
the Japan specimens ~~alone~~ affords the
only reason for considering them
specifically distinct, as I must
do for the present.* The plant

* *Arctiodracon Kamtschaticum*: spa-
tha vaginante superne in limbum
lanceolatum ~~seu~~ ellipticum acumi-
natum coloratum explanata. — Kam-
tschatka, Sitcha, Oregon, et in terra
Ochotensi?

from Ochotzk mentioned by Ledebour, however, is likely to be the same as that of Japan, or perhaps to show that all are forms of one species. Although our plant would be said, as is *Orontium*, to be destitute of a spathe, yet this organ in both is plainly represented by the sheath, the ^{mere} expansion of the summit of which into a limb would apparently convert our plant into *A. Canitschatense*. Plainly there is no ground for separating the *Orontia* from the *Dracontia*, as Schott and Endlicher have done; and the present genus strictly connects *Orontium*, *Symplocarpus*, and *Dracontium*, being intermediate between the former, while ⁱⁿ the bilocular variety it approaches the latter. Our genus is completely distinct from *Symplocarpus*, ~~from~~ by its elongated scape, its

membranaceous spathe or sheath, ^{is spiciform spadix}
~~and~~ its horizontal or orthotropous ovules, and probably in the nature of the fruit. I do not insist upon the bilocular ovary in this connexion, because I suspect it may not be ^{absolutely} constant in Arctiodracon, and I long ago detected the ^{occasional} rudiment of a second cell in the ovary of Symplocarpus foetidus.*

* The ovule of Symplocarpus is rightly described by ^(in ~~the~~ Journal of New York, 2, p. 242) Dr. Torrey as anatropous. It is by an oversight that ~~the~~ it is said to be orthotropous in the second edition of my Manual of Bot. N. United States, for I had long ago ascertained the contrary.

I may here correct the character of Orontium. ^(taken from Hooker's figure) Endlicher's description of the ovule as "basilare, transversum, excentric amphitropum" has been ~~followed~~ implicitly adopted ever since; but it is correct in only one partic-

ular. For the ovule is really anatropous, and attached to the side of the cell. And the depressed stigma is by no means minute; nor are the anthers correctly figured by Hooker, but rather as described by Torrey. In fact, the anther is just like that of Arctiodracon, only ^{the cells are} rather shorter, and ^{opening} ~~dehiscent~~ only half-way down, so that the dehiscence appears to be transverse. I do not possess Dracontium; but the ^{diagnostic} characters of the genera of Dracontice, as far as known to me, may be expressed as follows: -

Alaiadaceae

Potamogeton natans, Linn.
Hakodadi; in ponds on the borders of
marshes.

Thunberg enumerates no Potamogeton
from Japan, nor any Alaiadaceous plant
except Rostera, nor any Juncagineae.

What are Thunberg's Alisma flava
and A. cordifolia? His Sagittaria
sagittata is said to have esculent roots:
it is probably tuber-bearing, like our S.
variabilis, Engelm., the tubers of which were
long ago noticed by Kalm, as Dr. Darling-
ton has pointed out.

Orchidaceae.

Liparis liliifolia, Rich.; Lindl.
Bot. Reg. & Gen. & Sp. Orch., p. 28; Hook.
Jl. Bot. Am., 2, p. 193. Ophrys lili-
folia, Linn. Malaxis liliifolia,
Swartz, Act. Holm.; Bot. Mag., t. 2004,
 Hakodadi, on hillsides in much shaded
 places. J. Small.

A most interesting addition to the
 known flora of Japan, of a plant
 supposed to be peculiar to the eastern
 side of North America, and of a family
 the species of which are generally consid-
 ered as of restricted range. Although
 nowhere abundant in individuals Liparis
liliifolia extends from Canada to the
 mountains or upper districts of Georgia,
 and northward as far west as Wisconsin.
 I am not aware that it crosses the
 Mississippi, and nothing of the kind
 is known from the western side of
 the continent. Yet we now have pre-

219
cise the same thing from the
northern part of Japan; but, un-
fortunately ~~in~~ only two specimens
were collected. It is worth noticing
that in this, as in some other cases,
it is the purely eastern American
species that ~~was~~ ~~the~~ is shared with
Japan, and not the one, with more
northern range which we have in
common with Europe. This instance
is nearly parallel to that of *Lipularia*,
an eastern American Orchid of the
same geographical range with *Li-*
paris filifolia, but which recurs
in the ^{Sikkim} Himalaya under a closely
resembling if not ^{specifically} identical form.
But there there is no doubt of the
identity of the ~~species~~ Japanese
with the American species.

Liparis filifolia, var.? floribus
minoribus lutescenti-purpureis.

Two specimens gathered by Small
in July, and therefore ^{apparently} ~~on the~~
some part of the west coast of
Jesso, differ from the foregoing in
having smaller flowers and "yel-
lowish purple" flowers. Their structure
as far as can be determined, is
the same, and not like that of
L. nervosa, which belongs to the
southern part of Japan, and which
in this expedition was gathered only
upon Ousima and the proper
Loo Choo Islands.

Oreorchis lancifolia (sp. nov.)

Crematstra mitrata (sp. nov.);
folio oblongo; vaginis scapi 2 spatula-
ceis laxis; bracteis lanceolatis subacu-
tis; gynostemio fere filiformi sub
stigmati in corpore postice pla-
num deltoides-rotundum antice
cavum mitraforme ^{vel} ~~seus~~ umbraculifor-
me amplum, appendicem labelli
oblongam acutatam planam in ala-
bastro claudentem, abrupte dilatato.
— Hakodadi; on hillsides, ^{by the flowers.} with mix-

Tubers ovate-globose, fibrous
roots stout. Leaf from the tuber
10 or 11 inches long including the
convolute petioliform and sheathed base,
the lamina 2 or 2 1/2 inches wide,
cuspidate-acuminate, nearly as long
equalling the scape. Flowers buds
"dull red", two thirds of an inch long,
clavate. Sepals and petals nearly
as in *C. variegabilis*, as figured by
Blume. But the appendage on the
lip is not roundish and wrinkled, but
flat, ~~smooth~~ lancet-shaped, acute,
and smooth, and in the bud received
into the curious cap of the anterior
side of the summit of the column.

which distinguishes this species. Below this expanded and semi-umbrelliform summit the column ^{is nearly} filiform, slightly thickened upwards. In other, &c. of the genus. — I had supposed this to be Blum's Styacinthorchis variabilis; but the column is ^{much} more slender than in the figure, and the summit very peculiar. Its structure is best ~~exhibited~~ illustrated by figures (Plate). It may be suspected that the shriveled appendage of the lip in Blum's species does not represent the natural condition; but in no way can his delineation of the column be made to conform to that of the ~~the~~ present plant.

Calanthe discolor, Lindl. Bot.
Reg. 1840. t. 55. Gray in Perry. Jap. Exped.
2. p. 320. Simoda and Hakodadi, in
shady places.

"Perigonium dull red or greenish-
purple; column and labellum white,
with pale pink nerves on the latter";

Orchis latifolia, Linn.; var.
Beerlingiana, Cham. & Schlecht.; Ledeb.
Fl. Ross. 4. p. 54. O. aristata, Fisch.
in Lindl. Gen. & Sp. Orchid. p. 262; Gray, l.c.
Hakodadi, on hills and mountains.

Platanthera tipsuloides, Lindl.
Gen. & Sp. Orchid. p. 285; Ledeb. l.c. p.
69. Orchis tipsuloides, Linn. f.
Suppl. p. 401.

Cape Romanzoff, in swamps,
J. Small.

This is a little known and rare
plant, said to ~~come~~ in habit Kant-
schatka. ~~The flowers~~ ^{are} The bracts ^{are} by
^{no} means twice the length of the flowers
in ^{well-developed} ~~very~~ specimens; only the lower
~~flowers~~ ^{bracts} exceed or equal them: the fleshy

Petals are linear-oblong instead of ovate,
and the labellum, of similar texture,
becomes linear and longer. Flowers green-
ish-purple.

Habenaria Japonica; caule fo-
lioso $\frac{2}{3}$ -2-pedali; foliis inferioribus ovatis
oblongisque obtusis, superioribus bracte-
isque sensim angustioribus lanceolatis
acutis; ^{spica elongato-oblonga multiflora;} ovario semili ~~sessum~~ apice
angustato; floribus niveis; sepalis
lato-ovatis subconformibus; petalis oblongo-
linearibus uninerviis subpatentibus;
labello angustissime lineari crasso-
carnoso integerrimo (dependente)
~~semum~~ ^{filiformi} elongato filiformi
calcare gracili; ~~inferius~~ ^{deorsum} ~~sessum~~ ^{vix clavato}
~~et~~ ^{apice} ~~acuto~~ ^(linearis) plus duplo triplo
^{retinaculo} ~~ample~~ ^{oblongo} ~~semineformi~~
breviore; — *Orchis Japonica*, Thunb.
Fh. Jap. p. 26, & 2c. *Pl. Jap.* t. 3,
Platanthera Japonica, Lindl. *Gen. &*
Sp. Orch. p. 290. Hakodadi; on open
hillsides.

I cannot doubt that this is
 Thunberg's *Orchis Japonica*. The
 flowers are ~~said~~ recorded as white, and
 the specimens accord very well with
 the (figure original) and Description, ex-
 cept that the spur is not so very
 long and slender, rarely exceeding an
 inch and a half in length, and somewhat
 clavate-thickened downwards. The stems
 also are more leafy than in the figure;
 the lower leaves (not represented in Thunberg's
 figure) much broader. The lip is fleshy,
 but flattish, ^{becoming filiform in the eye,} its tip obtuse, its very
 base auriculate-dilated and subsaccate
 where it merges in the orifice of the spur.
 The gland or retinaculum is remarka-
 bly large, linear or narrow-oblong, and
 thin or scale-like. There is a single
 specimen with undeveloped flowers and
 narrower leaves, gathered in marshes
 near Itakodadi, apparently a form of
 this species.

Plate

76

Cephalanthera ensifolia, Mich.,
& var. foliosa: major, foliiflora;
floribus inferioribus eximie folioso-bractea-
tis, hypochilio magis saccato. —
Simoda and Takodadi, on shaded hills.

To this belongs ~~Thunberg's~~ Scrapias
falcata, Thunb. Fl. Jap. p. 28, & 2c,
Pl. Jap. t. 5, from whose figure the
bracts are altogether omitted. The
few specimens collected vary from a
span to a foot and a half in height.
The smaller ones are few flowered and
quite like ^{separate specimens of the} ~~the~~ European C. ensifolia,
except that the epichilium bears less
of, ~~the~~ or nearly wants, the granulation
rather than beard which is generally
conspicuous in that species; but this
character as well as the number and
strength of the lamellae, may not
be relied upon. The larger ~~form~~
variety bears from 10 to 20 flowers, and
nearly half of these are subtended by
foliaceous bracts, from 5 to 2 inches in
length, and like the upper leaves, giving
~~the plant a very peculiar appearance.~~
As the lip appears to be more saccate
than usual, this would naturally be

taken for a distinct species, the more so, since Dr. Lindley remarks that he had never ^{seen in *C. ensifolia*} ~~seen such~~ leafy bracts even as those represented in Wright's plate of *C. acuminata*. But the specimens gathered by Mr. Wright, few as they are, connect the var. *foliosa* with the ordinary form of this wide-spread species.

glaberrima;

Cephalanthera Japonica (Gray
in Perry, Jap. Exped. 2. p. 319, excl. Syn.
Thunb.) : foliis amplexicantibus ovato-
oblongis subacuminatis, summis
lanceolatis; bracteis brevissimis; floribus
2-7 luteis subpedicellatis; ^{labello} sepalis petal-
isque ovalibus obtusissimis, brevioribus,
hypochilio ~~calcar~~ saeco conico
porrecto quasi calcarato, epichilio
latissimo (bis latiore quam longo)
repando, subtrilobo imberbi, ~~lobis~~
~~lateralibus~~ plurilamellato, lamellis
centralibus 3-5 ^{anthera super} eximis; ^{stigma sessili,} ~~serapias~~
erecta, Thunb. Fd. Jap. l.c. & 2c. Pl.
Jap. t. 4? ~~red flower~~ — Simoda, on
shaded hills. Pl

Plant 9 to 18 inches high. Leaves
5 to 7, besides the sheaths at the base,
from 2 1/2 to 5 inches long, and from 9 to
20 lines broad when full grown, mostly
narrowed at the clasping base, the
principal nerves 5 to 7. Perianth
about half an inch in length, yellow;

974
the labellum with 3 ~~strong and~~ ^{sharp} ~~salient~~ [central] crests and 3 or 4 deep orange [lateral?] lines; ~~epichilium~~ ^{epichilium} upon the rather fleshy epichilium: these ~~central and~~ very salient crests run from near the base to the apex of the central portion of the epichilium. Column terete. Anther ^{strictly sessile and erect over the} terminal ~~stigma~~ ^{truncate stigma} ~~transverse~~ ~~which is~~ ^{truncate}, entirely destitute of any rostellum or apiculation. — A true Cephalanthera, and a strongly marked one, of which Mr. Wright brought better developed specimens than those I formerly described. It cannot well be Thunberg's *Serpis falcata*, but, from the figure, I should take it for his *S. erecta*. Thunberg, however, says the flowers of that species are white and minute. They are represented as ~~as~~ ^{but} about half the size of ours, ~~and~~ with a manifest spur. The saccate spur

in our plant is a prominent feature.

Pogonia ophioglossoides, Nutt.
Gen. 2. p. 192; Hook. Exot. Fl. t. 70;
St. Fl. Bor.-Am. 2. p. 201; Lindl. Gen.
Sp. Orchid. p. 413. Simoda, in
wet places, Hakodadi, in marshes.

A common Orchid in eastern
North America, from Newfoundland to
Florida, but not found west of the
Mississippi, that I know of. Here
we have the same species plentifully
from Japan. The numerous speci-
mens uniformly exhibit oblong-lance-
olate leaves, not narrower, however,
than the often are in the United States.
Mr. Wright describes the fresh flowers
as pink, the petals at the apex and
the labellum ~~marked~~ beneath with
deeper-colored veins: the crest of the label-
lum greenish and short below, above
longer and whitish.

(nunc altero erecto;

Arcthusa Japonica (sp. nov.);

caule basi unifoliato ~~apice~~ ^{flore} ~~uni-ra-~~
~~siusve bifloro~~; ~~subnudo~~ ^{subnudo} ~~ante~~ ^{subregulari}
 obovato-dilatato ~~nudo~~ ^{apice} subtrilobo.
 procerus nudo, lobo medio longiore
 lateralibus multum angustiore in
^{lamella parva instructo;}
 tegerrimo; gynostemio anguste alato,
 ala superne antheram cassidifor-
 mem haud superante. — Itakobadi;
 in swamps, along with the preceding.

In the United States we al-
 ways find *Pogonia ophioglossoides*
~~in company~~ accompanied by ~~Calo-~~
 the more beautiful *Calopogon pul-*
chellus. The ~~rather~~ and still hand-
 some but much rarer *Arcthusa*
bulbosa ^{often} occurs in the same bogs,
 especially northward, but it flowers
 a month earlier. On ~~the Japan collec-~~
~~tion~~ ^{receiving} the American associate of *Pogo-*
nia ophioglossoides from Japan, I was
 disappointed at ~~not~~ the absence of its
 companion, the *Calopogon*. But, on

searching among the copious specimens I ^{found mixed with them} ~~detected~~ a ^{peculiar} form individuals of this second species of our Eastern North American genus *Arthusa*, the two plants having been gathered indiscriminately. The ~~plant~~ new species is about as tall as *Arthusa bulbosa* and bears a similar globose corm at the base; above which the third or fourth sheath develops ~~into~~ a well-formed, linear or ensiform, ~~leaf~~ green leaf, 3 or 4 inches long and ~~nearly~~ ^{or 4} 3 lines wide, much like that of *Calopogon*. *A. bulbosa*, it may be remarked, produces a similar, although usually ~~less compact~~ smaller true leaf from the uppermost sheath; but it does not often appear until after ~~flowering~~ blossoming. The flower in *A. Japonica* is smaller than that of *A. bulbosa*, and of a darker purple; by the curvature of the ovary

it becomes horizontal or somewhat
 nodding; ~~the insertion~~ it is scarcely
 ringent, the sepals and petals not
 being directed backwards and then
 arched over the column, and the upper
 part of the labellum being slightly
 recurved, and the insertion of the
 parts is only slightly oblique. The
 labellum is still ^{more} different,
 being broadly ^{obovate} dilated upwards, thin
 and veiny, entirely destitute of any
 crest or bearded lines, the broad
 and rounded ^{sides or} lateral lobes incurved, ~~the~~
 and much larger than the narrow
 and moderately projecting, entire, blunt
 or truncate, its midvein ~~a little~~
 thickened ^(bearing a small and smooth) or lamellate at the apex;
 the base of the labellum adnate to
 the narrowly winged margins of the
 slender column below the middle,
 the winged edges of the column are
 more expanded at the summit, behind
 the helmet-shaped ^{opercular} anther, but not

into such a conspicuous petaloid
 appendage, as that of *A. bulbosa*.
 Pollinia ^(and stigma) apparently similar to those
 of *A. bulbosa*. ~~At~~ In a few spe-
 cimens a slender pedicel originates
 opposite the small and scarious clas-
 ping bract at the base of the ovary,
 overlaps the flower, and is terminated
 by a ~~later~~ second, later, ~~and appa-~~
 flower, which is erect, at least in
 the bud.

Oreorchis

n. m.

5
2
Cypripedium Japonicum, Thunb.
Fl. Jap. p. 30, & 2c. Pl. Jap. t. 1. Shady
hills, or grassy hill sides, Simoda
and Hakodadi.

"Flowers pink, with dark purple
spots on the lateral petals near the
base and the labellum within."

Zingiberaceae.

Alpinia aff. Galanga, Simo-
da, on shady hills.

"Flowers pink, the labellum with
white stripes."

Iridaceae

Iris setosa, Pall.; Link; Ledeb.
 Fl. Ross. 4, p. 96; Trautv. & Mey. Fl.
 Ochot. p. 90. ^{I. sibirica, Thunb. in Linn. Trans. 2, p. 328.}
 Nakoduri, in marshes,
 forming large bunches (flowers vio-
 let.)

Iris laevigata, Fisch.; Ledeb.
 L.c. I. Smolinii, Ledeb. in Denks.
 Bot. Ges. Regensb. ^{I. versicolor, Thunb. Fl. Jap. p. 33.} 3, p. 48, ^{Nakoduri,}
 and ^{and Straits of Dangar,} Cape (Savine), Gesso, on moun-
 tain-sides, J. Small.

This is probably Thunberg's
I. versicolor; and accords well with
 the character of I. laevigata. The
 flowers are large, and ^{deep} ~~bright~~ purple
 or violet. The leaves resemble those of
I. setosa.

Iris orientalis, Thunb. in Linn.
 Trans. 2, p. 328? I. sibirica, Thunb.,
 Fl. Jap. p. 33, fide Thunb. Kinoda;

on hillsides.

Only a single specimen was gathered, ~~which was said~~ the flowers of which were said to be white. The inner petals are ^{linear-}~~narrowly~~ oblong, about the length of the stamens, ~~obtus~~ and entire.

Iris gracilipes (sp. nov.); caulis e rhizomate gracili repente pluribus spithameis et ultra gracilibus 3-4-foliatis laxae 2-4-floris folia radicalia linearia graminea subaequantibus; pedunculis filiformibus folia caulina ~~pilos~~ ^{scariosam} fulcrantia aequantibus; flore intra spatham ^{monophyllam} sessile solitario; perigonii caerulei tubo ovario brevi trigono ^{triplo} ~~quaduplo~~ longiore; laciniis obcordato-oblongis, exterioribus ~~truncatis~~ lamella tenui glabra cristatis interioribus breviter unguiculatis duplo maioribus; stigmatibus bifidis laciniatis. — Hakodadi;

in marshes.

Leaves thin and flaccid in the dried specimens; the radical ones from a span to a foot long, about 4 lines wide, 3-5-nerved, gradually acuminate; the cauline similar but successively shorter, stem slender, often flexuous, angled, producing from the axil of each leaf ~~leaf~~ cauline leaf a ^{naked and} slender branch or one-flowered peduncle, of 2 or 3 inches in length, which is terminated by a monophyllous, ~~scarious~~ ^{sheathing,} spathe, two-thirds of an inch in length, sheathing the base of a single ~~flower~~ sessile flower. Ovary ovoid-triangular, 2 or 3 lines long. Perianth "blue"; the slender tube half or three fourths of an inch in length; the exterior divisions an inch long, ^{and not unguiculate,} glabrous, but with a ~~smooth~~ ^{narrow and} crest of a single very narrow and smooth

9
207
Lamella: inner divisions similar in shape, but only half an inch long. Fruit not seen. — A remarkable species, surely not Thunberg's *I. ensata*.

Pardanthus dichotomus, Ledeb.
Fl. Ross. 4. p. 106. *Iris dichotoma*,
Amel.; Pall.; Linn. f. etc. 2.
Japonica, Thunb. ~~Fl. Jap. p.~~ in
Linn. Trans. 2. p. 327? Gray in Per-
ry, Exped. 2. p. 320. Simoda; on
shady hills, &c.

Hardly any blossoms were gathered: they are recorded as being white, and mottled with some blue and yellow.

27
Smilacaceae.

Smilax China, Linn. Spec. ed. 1, p. 1029; Thunb. Fl. Jap. p. 152; Kunth, Enum. 5. p. 243. S. minus spinosa, fructu rubicundo, radice virtuosa Chinae dicta, Kämpff. Amoen. p. 781, t. 782. S. Japonica, Gray in Perry, ^{Jap. Exped.} 2, p. 320. Ceprosanthus Japonicus Kunth, l.c. p. 268? On hills. H. Simoda and Wakodadi.

In the Botany of Perry's Expedition. I overlooked S. China of Linnæus, ~~as a new~~ as a Chinese and Japanese plant. Ours is clearly the plant figured by Kämpfer; and Mr. Wright ~~gathered~~ collected the same species at Kato-nasima and at Hongkong. I find the ovules single in each ^{of the three} cells. But Kämpfer states that the seeds are four, five, or six, and figures the latter number. So that the

Coprosma *japonicus* of Kunth
 still
 may perhaps be adduced as a
 synonym.

Smilax stenopetala (sp. nov.);
 inermis, glabra; caule tereti scan-
 dente; foliis amplis late ovalibus seu
 ovatis ~~vix~~ vix subcordatis ex apice obtu-
 sissimo vel retuso acuminatis con-
 coloribus submarginatis triplinerviis
 cum nervis 2-4 lateralibus inconspic-
 uis reticulatis; pedunculis brevibus
 saepius compositis; umbellis multifloris;
 perigonii rubelli phyllis 3 interioribus
 (petalis) ~~lanceolatis~~ ^{summe attenuatis} ligulatis; Carin-
 ato-uninerviis exterioribus oblonga (sepalis)
~~adæquantibus~~; et filamenta fili-
 formia adæquantibus; ovario ~~(se-~~
~~pius 3-locularis)~~ ^(sepius 3) loculis uninula-
 tis; baccis purpureis. — *S. Pseudo-*
China, Thunb. Fl. Jap. p. 152, non
 Linn., nec Lour. Kagosima
 Bay, Kiusiu. Also Hakodadi,

unless a ticket has been misplaced.

Stems climbing to the height of 8 or 12 feet, smooth and unarmed, or rarely with a small prickle; the branches rather herbaceous. Petioles ^{short,} mostly cirrhiferous. Leaves chartaceous, green both sides, from $3\frac{1}{2}$ to 6 inches long, and 2 to 5 inches wide, mostly rounded at both ends, but ^{pointed} with a small abrupt acumination, having two principal ribs arising from the midrib above its base, and running rather nearer the centre than the margins, and one or sometimes two pairs of much less conspicuous lateral ~~veins~~ nerves. Peduncles half an inch to an inch long and bearing one or two umbels, or sometimes nearly two inches long and bearing three or four umbels; these are ~~very~~ many-flowered, especially the male ones: ~~pedi~~ pedicels 3 to 5 lines long, filiform. Male flowers nearly

3 lines long, the female ones smaller.
Sepals, or outer divisions of the
perianth, narrowly oblong in the
male flowers, ovate-oblong in the
female, obtuse, faintly one-nerved.
Petals much narrower, strongly and
carinately one-nerved, lanceolate-li-
gulate, obtuse, or in the male
blossoms much attenuated upward,
but with a small, spatulate, obtuse
tip, erect at the base, above revolute
or spirally coiled after anthesis.
Filaments, ^{or} thrice the length of the
anthers. Fertile flowers with 4 to
6 short sterile filaments; ovary globular;
stigmas generally 3, short and thick.
Berries globular, ripening one or
two seeds. This is most probably
Thunberg's *S. Pseudo-china*, but
not that of Loureiro, which Kunth
^{The male flowers are said to resemble the odor of *Protula lentia*.}
has named *S. corbularia*. Of course
it is not the Linnean species. There
is a *S. Sieboldii* of Hassk. from

Japan, of which no description is published. I have nothing answering to Kunth's *Heterosmilax Japonica*, nor to his *Cyrtosmanthus corymbosus*.

Paris hexaphylla (Thunb.):
 foliis ⁵⁻⁸ ~~ovatis~~ (ex Thunb. etc.) ~~septenis~~ ~~ovatis~~
~~ovatis~~ ovato-lanceolatis oblongisve
 utrinque acuminatis; floribus tetra-
 meris; sepalis ovato-lanceolatis petala
 staminaque tertiam parte superantibus;
 connectivo ultra antheram ^{modice} ~~longe~~
 producto; stylis in a basi connatis
 ovario longioribus. — *P. hexaphylla*,
 Thunb. in *Linnaea*, b. p. 586; Kunth,
Enum., 5. p. 117; Ledeb. *Fl. Ross.*, 4. p. 120;
 Trautv. & Mey. *Fl. Ochot.*, p. 91. Hako-
 dadi on much shaded hill sides,
 J. Small. This little-known species, we
 observe, was collected in the Okotzk
 region by Middenдорff, "mostly with
 seven, more seldom with five, six, or

eight leaves." In our specimens they are seven or eight; the largest are 5 inches long and $1\frac{1}{2}$ to 2 inches wide. The sepals ~~are~~ vary from an inch to an inch and a half in length and are greenish, as in *P. quadrifolia*. The terminal cusp of the stamens is ~~only about~~ proportionally shorter than in the latter species, being only about half the length of the anther. Stem from 9 to 18 inches high.

Paris tetraphylla (sp. nov.):
 foliis quaternis semilibus rhomboido-ovatis acuminatis; flore tetrasepalo apetalo octandro; antheris proceris muticis sepalis ovato-lanceolatis stylisque 4 basi mucice connatis dimidio brevioribus. —
 Hakodadi; on shaded hillsides; also collected by J. Small, probably in

the Straits of Sangar.

This is an interesting analogue of ~~Paris~~ the European and Siberian *Paris quadrifolia*, which it quite resembles in habit, except that the leaves are often larger, less narrowed at the base, and more acuminate. The largest are 4 inches long and almost 3 wide, and resemble those of a *Trillium*. In Mr. Small's specimens they are narrower and nearly oblong. Peduncle an inch or ^{rarely} an inch and a half long, erect. Flower greenish. Sepals reflexed in anthesis, 5 to 6 lines long, broadly ovate-lanceolate, tapering gradually to a point. The flowers are all expanded, but none of them show any ^{vestiges} ~~trace~~ of petals. Filaments subulate from a dilated and obscurely monadelphous base, a line and a half long. Anthers about the same length, linear, obtuse, or retuse, destitute of any trace of a mucro.

17 277
Styles filiform, much exceeding the
stamens, ~~not~~ ^{manifestly} revolute, stigmatic
down their inner face, united at
the base, the united portion half
a line in length. — I have not
seen *P. incompleta*, the only other
apetalous species known: but ours
is surely as distinct from that spe-
cies as it is from *P. quadrifolia*.

Trillium erectum, Linn.; var.
Japonicum; pedunculo foliis am-
plissimis, ^{dilatatis} dimidio brevioribus; petalis ~~in-~~
~~idi-~~ ~~albis~~ albidis vel purpureis. — *T.*
erectum var. *album*, Gray in Perry,
Jap. Exped. 2, p. 320. — Hakodadi,
in woods.

The specimens gathered by Will-
iams and Morrow, about the end of
May, have good flowers. Those of the
present collection, gathered from the
6th to the 27th of June have the

petals withered or the fruit formed.
Mr. Small ^{notes} ~~records~~ that the flowers
were light purple: those of the former
collection were ~~said~~ greenish-white.
The full suite of specimens brings
to view no other differences between
the Japanese and the North Amer-
ican plant than the generally
more dilated leaves ^{of the former,} — the largest be-
coming 6 inches in length and 6 or
7 in breadth, — and the proportionally
shorter peduncle. This ~~latter~~ however,
is one or two inches long: in the
American plant it varies from one
to three inches. — Other species of
this peculiarly North American genus
have a wide ~~area~~ geographical range,
and seem to ~~vary~~ develop variations as
they pass northward and westward.
Our *T. cernuum* towards its north-
western limit, in British America
^{elevate} ~~raise~~ and
appears to lengthen its peduncle until
it becomes difficult to distinguish,

in dried specimens, from the white variety of *T. erectum*. And ^{both with white and pink petals} *T. erectum* itself, ~~is either~~ reproduced in Oregon and California, as *T. ovatum* of Pursh, which in Northern Oregon and Kantschatha becomes *T. obovatum* of Pursh (both with closely sessile and with slightly petiolate leaves), which in turn may be regarded as a form of *T. grandiflorum*. ~~Our eastern~~ *T. sessile* reappears in California, where it varies as it does in eastern North America; and ~~the~~ characters of *T. recurvatum*, ^{Beck} of Illinois, Missouri, &c. are carried to an extreme in *T. petiolatum*, Pursh, of the interior of Oregon.

20
Liliaceae.

Asparagus lucidus, Lindl. Bot.
Reg. 1844, misc. p. 36; Kunth, Enum.
5, p. 72. ^{A. falcatus, Thunb. Fl. Zeyl. p. 139, fig. Linna.} Simoda, Mr. Boggs and
J. Small; growing on hill sides in
much exposed places.

Only the male plant was col-
lected. It is said to attain the height
of fourteen feet. The leaves, or cladodia,
vary from 8 to 18 lines in length
and are often in pairs or threes. Pedit-
cels often geminate, about 3 lines long,
articulated in the middle, ^{nearly twice the length of} ~~longer than~~
the "greenish-yellow" flowers. Anthers
oval much shorter than the linear-
subulate filament. This is doubt-
less Thunberg's A. falcatus, and, from
the figure and description probably
distinct enough from the Linnaean,
Ceylonese species.

Asparagus Wrightii (sp. nov.);
herbaceous, erectus & rhizomate crasso

~~Sp. 21~~ *horizontalis*, glaberrimus; ramis
adscendentibus ramulisque striato-
angulatis; foliis squamiformibus
scariosis ^{canjines} basi subcalcaratis inermi-
bus; cladodis setaceis acutissimis
ut videtur compressis subfalcatis
(5-10 lin longis) binis ternis quinis-
ve; floribus masculis cum pedicello
brevisimo articulatis; antheris ^{conato-} didy-
mis haud apicatis filamentis lin-
earibus 2-3-plo brevioribus. — Itako-
dadi; on hillsides.

Plant 4 feet high, with very
slender foliage. Male flowers only
collected; these are noted by Mr.
Bright as greenish-white, turning
yellow in withering, and by J.
Small as whitish-brown. They
^{mostly} ~~are~~ clustered in twos or fours,
are about a line and a half long,
and almost sessile, the pedicel, with
the apex of which the flower is artic-
ulated being very short. The plant
should be compared with *Kunthia A.*

Schoberioides from Java; but the leaves (cladodia) of that species are said to be only 5 lines long, the flowers ^{hardly} ~~not~~ so large as those of *Acleranthus perennis*, only three fourths of a line long, the filaments capillary, and the anthers "apiculate."

Polygonatum vulgare, Desf.
in Ann. Mus. Par. 9, p. 49; Redout. Lil. 7,
258; Kunth, Enum. 5, p. 123. *P. officinale*, All. Fl. Pied. 1, p. 131; Ledeb. Fl. Ross.
4, p. 123. *Convallaria Polygonatum*,
Lin.; Thunb. Fl. Jap. p. 142. Hillsides
and shady places, Hakodadi.

Var. *foliis basi in petiolum brevem attenuatis*. - *P. Japonicum*. Morr.
& Decaisne in Ann. Sci. Nat.; Kunth,
P. glaberrimum, b. Koch in Linnaea, 22, p. 266.
l.c. With the ordinary form; a
single specimen.

The specimens vary from a span to
a foot and a half in height, and

perfectly accord with European and
Liberian specimens. I have seen
nothing answering to them in America.

Polygonatum giganteum, Dietr.
Gray, Man. Bot. U. S. ed. 2. p. 446. P.
giganteum, Canaliculatum, & commuta-
tum, Dietr.; Kunth, l. c. P. Thunber-
gii, Morr. & Decaisne ~~l. c. ex char. brev.~~ Sci. Nat. 1834,
~~Kunth,~~ Hakodadi, in rich alluvial
soil.

To all appearance this is the
same as our great Polygonatum
of the Eastern United States. The plants
are from 3 to 5 feet high; the leaves 4 to
7 inches long, ~~and~~ $1\frac{1}{4}$ to 3 inches wide,
and more or less glaucous beneath, as
they also are in the United States.
Peduncles mostly 2-3-flowered and short.
Flowers from 9 to 11 inches in length.
Filaments attached above the middle of
the tube ^{appearing} smooth and glabrous, but
under a lens showing a minute sea=

24
304
brosity or papillarity toward the summit. — ~~P. Thun~~ The name of *P. Thunbergii*, if it really belongs to this species, is a year older than that of *P. giganteum*. But *Thunberg's* *Corvallaria multiflora* is probably the following.

Polygonatum multiflorum,
All. Fl. Piedm. 1. p. 131; Desf. l. c.;
Kunth, l. c.; Ledeb. Fl. Ross. 4. p. 125,
P. Thunbergii, Kunth, l. c. ex spec. Zoll.
P. Japonicum, Gray in Perry, Jap. Exped.
l. c.? *Corvallaria multiflora*, ^{Lin.} Thunb.,
Fl. Jap. p. 142. Simoda and Hako-
dadi, on grassy hill sides.

The specimens are mostly past flowering, but may be confidently referred to the European and Siberian *P. multiflorum*, — at least one of them, which ^{the filaments} has truly villous ^{(with many jointed hairs,} ~~filaments,~~
~~rather~~ unless its longer pedicels

25
would refer it to *P. polyanthemum*.
The only remaining specimen with
flowers has very glandular papillose
or subhirsute ^{which are thickened upwards} filaments, but is not
otherwise distinguishable. All the
specimens are perfectly glabrous, except
that one fruiting one shows ~~evident~~
traces, ~~of the same~~ on the nerves un-
derneath, of the fine hairiness which
is almost always ~~seen~~ evident in the
American *P. biflorum* and which
characterizes ^{the European} *P. polyanthemum*, so
it can scarcely be doubted that these
Japanese specimens, *P. polyanthemum*,
and our American *P. biflorum*
are all derivative forms of *P.*
multiflorum.

Polygonatum falcatum (sp. nov.);
glabrum; caule tereti 1-2 $\frac{1}{2}$ pedali; foliis
^{alternis} elongato-lanceolatis, ~~falcatis~~ a basi ad
apicem (sensim) angustatis falcatis
brevis petiolatis, nervis validioribus 3;

Pedunculis brevibus 2-6-floris;
floribus flavidis; filamentis subcla-
vatis glanduloso-scabris. — Simoda;
 on shady hill sides.

Only two specimens were gathered, along with the preceding, of which it may prove to be a variety. But the long and narrow, more or less falcate leaves, from 4 to 7 inches long and from half an inch to an inch wide near the obtuse or rounded base, thence tapering very gradually to the apex, are peculiar. They are bright green above, and glaucous beneath, very nervose, but with only three ~~of the~~ strong, nerves or ribs. Peduncles 3 to 8 lines long; the pedicels either umbellate and considerably shorter than the flower, or ~~when~~ longer and subracemose. Perianth half an inch long, cylindrical.

Convallaria majalis, Linn.;
Kuntze, Enum. 3, p. 130; Ledeb. Fl. Ross.
4, p. 126; Gray in Perry, Jap. Exped. 2,
p. 126. Hakodadi; on hill sides.

This is probably found only in
the northern part of Japan, as it was
unknown to Thunberg and apparently
to Siebold; but it must abound in
the vicinity of Hakodadi. There are no
indications that the Japanese cultivate
it, which is remarkable, considering
their fondness for floriculture. The
wide range of the Lily of the Valley ^{in the northern part of} through the Old World, its absence
from Western America, and its ap=
pearance on the eastern side of our
continent (in a climate apparently
well adapted to it) only in the Alle=
ghany mountains south of Pennsyl=
vania, are interesting facts in geograph=
ical distribution.

Smilacina (Majanthemum) bifolia, Desf.; var. Kantschatica, Sedeb.
Fl. Ross. 4, p. 127 ^(May, L. C.) Gravallaria bifolia,
 var. Kantschatica, Gomel. Fl. Sib. 1, p. 36,
 Hakodadi, in woods and thickets.

The copious specimens all belong to the large variety, with the ~~lower~~ dilated and more reniform-cordate leaves on smooth petioles, which occurs exclusively on the Pacific side of America, in Kantschatka, &c. In the Okotzk region Middendorff gathered this ~~form~~ ^{variety} upon the coast and the genuine, ~~European~~ European form in the interior. East of the Rocky mountains ~~the var. Canadensis~~ exclusively occurs the var. Canadensis, with much less cordate and serrate or subserrate leaves, and glabrous in the United States, but in British America often more pubescent than the European plant.

Our Smilacina trifolia may be

expected from Japan, since it occurs
in Siberia and as far east as the
Okhotsk District, but it is not
known ~~in Western North America~~
to grow west of the Rocky Mountains.
S. stellata, which ^{extends} ~~stretches~~ across
the whole breadth of the American con-
tinent, and has recently been discovered
in Norway (comm. by Fries under the
name of *S. racemosa*), is apparently re-
produced in Dahuria, in the form of
S. Dahurica, Turcz.

Smilacina Japonica, Gray in
Perry, Exped. 2. p. 321. ^{*Mulania pinnatifida*, Thunberg.} ~~*Stachys*~~ *Takodadi*; in
woods.

This holds its characters as distinct
from the North American *S. racemosa*.
The stem varies from 18 inches to only
half that height, and the smaller
specimens in the size of the leaves. It
nearly accord with Thunberg's *Mulania*
pinnatifida. The leaves vary, as do those of *S.*
racemosa, from broadly oval or ovate to

31
and nearly obtuse to oblong and
acuminate; the margins rather strongly
ciliate. The divisions of the (white)
perianth are oblong-spatulate, very
obtuse, a line and a half in length,
longer and much broader above than
the filament, the base of which is
adnate for one fourth of its length.
In *S. racemosa* the divisions of the
perianth are less than a line long
long, ^{(lanceolate-oblong, and} ~~and~~ smaller and narrower than
the dilated and almost hypogynous
filaments. — The ^{Himalayan} species upon which
Kuntze founded his genera *Jocaste*
and *Medora* appear to be ^{true} ~~true~~ *Smilacina*. — *S. racemosa* extends quite
across the American continent. *S. cili-*
ata, Desf. is known only ~~to~~ from a
drawing of Aubriet's, which ^{I should say} was doubt-
less made from a deperispermate *S. racemosa*,
except for the ~~bristly~~ conspicuous, bristly
ciliation of the leaves.

(*Clintonia Mdensis*, Trautv.
& Mey, Fl. Ochot. p. 92, t. 30. Cape
Romanoff, in shady places, J. Small.
On the sides of mountains northeast
of Stakodadi.

The specimens, gathered late in
June and in July, are all in fruit;
but they doubtless belong to the
C. Mdensis discovered by Middendorff
on the main land northwest of
~~Small's station~~. Iesso, upon the
northwestern extremity of which J. Small
found his plant, while Mr. Wright
gathered it at the southern end of the
island. The fruit is blue, as in all
the species, usually 3-celled; and the
cells each containing about five seeds,
resembling those of *C. borealis*. Besides
the 2 to 7 subumbellate pedicels at the
summit of the scape, there are com-
monly one or two scattered remote
lateral ones, somewhat as in the allied
Californian species (*C. Andrewsiana*,

Torr.). Leaves from 6 to 10 inches long and 2 1/2 to 4 inches wide. In the number of ovules and the size of the flowers, ^{vs.} *C. Mdensis* and *C. Andrewsiana* ~~fit~~ are intermediate between ~~*C. borealis* and *C. umbellata*~~. (the two species of eastern North America. *C. borealis* ranges from Newfoundland to ^{the} Saskatchewan, ~~and south to~~ and is replaced by *C. uniflora* west of the Rocky mountains. *C. umbellata* is confined to the Alleghany mountains; *C. Andrewsiana* to the mountains of California. The remaining species are *C. Mdensis* of northern Japan and *Okotsk*, and *C. alpina* of ~~the~~ Himalaya, which I have not seen.

Disporum ~~amidacium~~ (Gray in
 Perry, Jap. Exped. 2. p. 321; char. emend.);
 glaberrimum; caule subpedali sim-
 plicissimo 6-8-foliato; foliis subpe-
 tiolatis membranaceis, inferioribus
 ovalibus obtusis mucronatis, superiori-
 bus ovatis acute acuminatis; floribus
 terminalibus geminis vel plerumque
 solitariis; pedunculis suberectis;
 perigonii albi phyllis patentibus
 oblongo-lanceolatis subacuminatis
 basi leviter saecatis filamenta subu-
 lato-lanceolata bis superantibus;
 antheris ^{breviter} oblongis basi cordatis apice
 retusis; ovarii loculis uni-? biocu-
 latis. — Hakodadi, on very shady
 hillsides.

A copious supply of specimens
 confirms my reference of this species
 to Disporum, and, in deed; shows a
 pair of large, ^{(collateral; an atriporus} ovules, ascending from
 near the base of each cell,) The plant
 is possibly Thunberg's Urtica sessilis;
 The form

although in Williams and Morris

specimens I found only solitary
ovules. The perianth also is remark-
able in the genus for being open-
spreading from the base*. The
forming fruit likely to become a berry.
Rootstock filiform, creeping, hardly
thicker than the long fascicled fibrous
roots, which resemble those of *Moularia*.
Stem 6 to 10 ^{inches} or at length a foot, in height,
slender, ^{marked below the middle, and} bearing one or two scarious sheaths,
flexuous and leafy above. Leaves 2 or 3 inches
long, and of about half that width, thin, slightly puber-

~~published~~

~~* From the character~~

* It seemed probable, from the charac-
ter, that Ledebour's *Smilacina* (*Mon-
ranthus streptopoides*) was a close con-
gener of ~~Mon~~ *Disporum smilacinum*;
but I am now confident that his plant
is only *Streptopus roseus* (which rarely
shows any abrupt flexure of the peduncle), which
Small collected at the very same habitat (Ayau),
and Middendorff on Schantar Island.

32) beneath, evenly many-nerved, rounded
^{the margin minutely and closely serrulate-ciliate under a lens;}
at the base, ~~the~~ ^{the} petiole or contracted
base a line and a half long. Pedunc-
le slender, 6 to 9 lines in length,
erect or ascending, by no means
recurved. ^{Perianth 6 to 8 lines long.} ~~Flowers~~ "white, the [small
but very manifest] saccate bases of the
~~perianth~~ green," apparently open-
spreading, but not stellate or diver-
gent, deciduous. Filaments twice
the length of the anther, ^(hypogynous,) ~~long~~
~~and~~ ^{2 lines long} style slender, ^{2 lines long} soon deciduous
~~from the base~~ after anthesis from the
obovate ovary, 3-cleft at the summit,
or rarely to the middle; the stigmas
narrow, recurved. The anther is
extrorse in its attachment, but the
line of dehiscence is apparently slightly
introrse. The same is the case in *Mede-*
ola. The characters which ~~separate~~
~~the~~ distinguish the *Moulaica* from
the *Corvallaica* are too artificial
and too as well as too ^(indefinite) ~~perennescant~~
through gradations, to warrant a

separation. Evidently the large order
Liliaceae must be ~~extended~~ opened
to receive them all. Sieber
and ~~Dr.~~ Torrey ~~and~~ follow Endlicher
in the error of considering the rules
of most Convolvaceae to be ortho-
tropic.

Disporum sessile (Don), Roem.
& Schult., Syst. 7. p. 370; Kunth, Enum.
4. p. 208; Gray, l.c. Mularia
sessilis, Thunb., Fl. Jap. p. 135. Hako-
dadi and Simoda; in shady places,
also Slope Point, west coast of
Yesso, J. Small (in fruit).

Fine specimens, mostly 2 feet
high. Leaves usually subpetiolate,
varying (like in Dr. Morris's specimens)
from elongated-ovate to lanceolate,
and from 3 to 5 inches in length; the
broadest $2\frac{1}{2}$ inches wide. Flower
"white or greenish", campanulate,
over an inch in length, longer

than their peduncle, when geminate or in threes the umbel sessile or nearly so; the dilated-spatulate sepals and petals obtuse or retuse but with a slight point. Filament fully thrice the length of the oblong obtuse anther. Ovules either 2 or 3 in each cell. Fruit a globose berry. One of the narrow-leaved forms is noted as having yellowish green flowers; and the divisions of the perianth are ^{likewise} ~~also~~ narrower and less blunt. So that it approaches what we have from the Leyden herbarium under the name of *D. prillum*, that, however, ^{more umbellate} has flowers, only half as large, and the sepals pointed. The much larger and subsolitary flowers ^{of} distinguish *D. sessile* from the ~~the~~ Himalayan *D. Pilsurum* of Don.

Streptopus amplexifolius, DC.;
Redout. L'il. t. 259; Kunth, Enum. 4,
p. 205; Ledeb. Fl. Ross. 4, p. 122.
S. distortus, Michx.; Hook. Fl. Bor. Am.
2, p. 173, t. 138. Moulinia amplexifo-
lia, Linn. Cape Soya, north end
of Jessu, J. Small. (In fruit.)

The remarkable thing about the
geographical distribution of this
species is, that, while in the New
World it is a northern plant, exten-
ding from Hudson's Bay, Newfound-
land and New England across to our
northwestern coast and islands, and
thence to Japan and Kamtschatka,
in Europe it has not been detected north
of Saxony and Silesia, but extends
south to the Pyrenees, the mountains
of Calabria and Hungary, and
has not been found in Asia, except
at its northeastern confines.

Streptopus ^{roseus} ~~distortus~~, Michx. is prob-
ably to be found in northern Japan;

39. since it occurs in the Okhotsk District ~~as~~ the one hand, and the Aleutian islands on the other.

Lilium bulbiferum, Linn.;
var Thunbergianum. L. Philadelphicum.
Thunb. Fl. Jap. p. 133. L. bulbiferum, Thunb. in Linn. Trans. 2. p. 333.
L. Thunbergianum, Koern. & Schult. Syst. 7. p. 415. L. spectabile, Link? ^{et?}
Stukodavi, on the sides of hills and mountains. Straits of Sangar, near the sea-side, J. Small.

The specimens are nearly all of them one-flowered; the stem from a span to a foot high. Flower orange or yellow, with dark brown or dark red spots, especially below the middle. Stem occasionally as much wing-angled as that of L. spectabile, of Altaic and Eastern Siberia, to which the Japanese plant may be referred; but Fischer and Latourment's attempts to discriminate this ~~species~~ from L.

crocum and *L. bulbiferum* appear to be fertile. One or two specimens have the three outer divisions of the perianth, or sepals, considerably smaller than the others; perhaps an abnormal state.

Lilium? medeoloides (sp. nov.)
 bulbis granulato; caule simplicis-
 simo ~~scapiformi~~ longe nudo ad
 apicem folia plura oblonga verticil-
 lata seu quasi verticillata gerente
 atque pedunculo ~~superiore~~ superiore
 bracteato uniflora terminato; flore
 in alabastro parvo. perigonii phyllis
 oblongis dorso carinatis nudis
 apice ~~acutatis~~ ^{callosis} ^(sepilatis omnino lilii.) ~~in trip~~ ^{in trip} ~~barbulatis~~,
 Hakodadi, ~~in~~ shady hillsides. J. Small.

A single specimen, with a flower bud, only collected. But the plant is so remarkable that its characters are here indicated. The

granulate bulb resembles that of
Fritillaria Kamtschateensis. From
it rises a simple stem, a foot in
length without a leaf, scale, or
node, except at the summit, where
it bears a whorled fascicle of 8 or
10 leaves, only three of them
actually verticillate, the others fasci-
cled in their axils, unequal in size,
oblong or oblong-lanceolate, 3-ner-
ved and venulose, membranaceous, mostly
somewhat acuminate at both ends,
sessile; the larger ones 4 inches long
and ~~five~~ inch or an inch and a half
wide. Peduncle terminal, slender,
2 inches long, erect and naked below,
towards the summit nodding and
bearing 2 or 3, ovate or lanceolate,
alternate bracts, which are 5 to 9 lines
long, and a pair of line ar. ^{spatulate} bractlets
at the base of the terminal flower; these
are perhaps callose at the apex as in
L. Callorum. Flower bud (evidently not

full grown) half an inch in length.
Perianth purplish; the divisions
nearly similar except that the three
inner are more strongly ciliate,
oblong, not at all contracted at the
base; the keel at the ^{into a dorsal crest behind} produced ~~at~~
the cucullate apex, ~~into a dorsal~~
which is callous-thickened and minu-
tely bearded within. Stamens (the
filaments as yet shorter than the an-
thers), ovary, style, and stigma just
as in *Lilium*. *

Hemerocallis fulva, Linn.; Thunb.
Fl. Jap., p. 142. *H. disticha*, Don,
Bot. Cantab.; Kunth, *Enum.*, 4, p. 588,
Takodadi, on hillsides.

"Flowers yellow"; and "flowers orange
striped with brown." All the specimens
appear to belong to one species. Flowers
often ~~nearly~~ sessile or nearly so in a
sort of head; so it is probably also
H. Middendorffii, Trautv. & Mey. *Fl. Ochot.*
p. 94.

* *Gagea triflora*, Roem. & Schult,
Syst., 7, p. 551; Ledeb. *Fl. Ross.*, 4, p. 141 (*Or-
nithogalum triflorum*, Ledeb. *Ze. Pl.*
Ross.-Alt., 4, t. 379), was gathered by
Williams and Morrow at Simoda, but
not noticed in the report. ~~Perhaps it~~
~~is Thunberg's Scilla bifolia (S. Thunbergii,~~
~~Japanica.~~ It evidently connects *Loydia*
with *Gagea*, and the flowers ^{seem} ~~appear~~ to
have been white or whitish; the segmen-
ts show no trace of ~~glan~~ a nectarif-
erous plica or ~~foveola~~ at the base. Oules
only about 6 in each cell. It appears
to have been collected hitherto only by
Zilchius; the habitat unknown to Led-
ebour; probably on the coast of eastern Si-
beria or Kamtschatka. May not the *S.*
lutea gathered by Chamisso ^{in the} at the latter
country be the same species?

43
Funkia Sieboldiana, Hook. Bot.
Mag. t. 3663; Lin. Fl. Bot. Reg. 1839, t.
50; Kunth, Enum. 4, p. 592. Itake-
dadi, in marshes, J. Small.

Petals wing-margined, "Flowers
purple", barely 2 inches in length.
Probably a more form of *F. ovata*,
Spring. Specimens imperfect.

Allium Thunbergii, Don; Kunth,
Enum. 4, p. 454; Gray, l.c. *A. odorum* -
Thunb. Fl. Jap. p. 132. *A. angustum*,
Hook. & Arn. Bot. Beech. p. 272, non Don.
Itakodadi, on alluvial plains.

Mr. Wright gathered the same
species on Katorasima and the Loo-
choo Islands. Umbels mostly pul-
liferous. Perianth violet or purplish;
the divisions spreading, ovate-oblong,
rather obtuse, consimilar, not carinate.
Stamens soon longer than the perianth;
filaments all dilated and slightly
monadelphous at the base, consimilar.

except that the alternate ones are rather more dilated, being as wide at the base as the sepal, ^{all} simple and toothless, tapering gradually into a filiform summit. Ovary strongly 3-lobed; cells biovulate, somewhat 2-lobed at the summit. Spathe 2-valved, the valves shorter than the pedicels, tapering into a short point.

Allium Schoenoprasum, Linn.; Hook.
Fl. Bor.-Am., 2, p. 185; Kunth, Enum. 4, p.
 391; Ledeb., Fl. Ross. 4, p. 166. A. Sibiricum,
Linn.; Hook. & Arn., Bot. Beech. p. 130;
Trautv. & Mey., Fl. Ochot. p. 93. Hakodadi;
 on the bank of a ditch. Nippon
 at the entrance of the Straits of Sangar,
 in moist grounds, and
 on mountain-sides. J. Small.

New to Japan, but quite within the
 range of the species.

Allium Victorialis, Linn.; Hook.
& Arn., Bot. Beech. p. 118; Kunth, l. c. p.

432; Ledeb. Fl. Ross. 4. p. 184. On shaded mountain-sides, Hakodadi, and north end of Nippon.

"Flowers white or greenish." This extends from the eastern part of Europe to Kamtschatka. In the eastern part of North America it is replaced by *A. tricoecum*.

Idaggea Japonica, Rich. in
Schrad. Nov. Jour. Bot. 2. p. 9. t. 1; Schult.
Syst. 7. p. 308; (*Convallaria Japonica*,
Lin.; Thunb. Fl. Jap. (B. minor. Mon-
do, Kampp. Anan. Ext. p. 823. com-
 ic. Kagosima Bay, Kiu-Siu,
 on sandy banks.

In fruit: berries purple. The specimens answer to Kampp's figure. The pedicels are articulated in the middle.

Melanthaceae.

Helonias ^{sp. n.} pauciflora (sp. nov.);
 scapo bracteato paucifloro; ~~floribus~~
~~erectis~~ pedicellis longiusculis, fructi-
 feris erectis; antheris lineari-oblongis
 profunde sagittatis; capsula atte
 2-3-loba; seminibus ovoideo-sub-
 globosis basi tantum caruncula-
 to-appendiculatis. — In marshes,
 Cape Romanoff, J. Small.

Root, scape, and foliage al-
 most exactly those of *H. bullata*,
 except that, in the scanty specimens,
 the leaves are ~~shorter~~ smaller, only
 3 to 5 inches long (including the
 sheathing base or petiole), and
 the scape below furnished with
 more numerous and obtuser bracts.
 The specimens are all in fruit, ^{and} the
 capsule dehiscent; but the perianth,
 filaments, and one or two of the
 anthers are persistent. The flowers
 appear to have been only 4 or 5, in

a short raceme, on pedicels which
in fruit are two thirds or three
fourths of an inch in length; ~~they must~~ ~~and~~ they are twice
the size of those of *H. bullata*; the
linear-spatulate and obtuse, greenish,
persistent divisions of the perianth
becoming half an inch in length.
Filaments subulate-filiform, inser-
ted into the base of ~~the~~ each divi-
sion of the perianth, and somewhat
exceeding it in length. Anther quite
different ^{in shape} from that of *H. bullata*, being
oblong-linear with a deeply sagit-
tate base, obtuse, distinctly two-
celled, ^{extrose,} the cells opening longitudinally.
Styles and stigmas not seen.

Capsule rather shorter than the
persistent perianth, ^{chartaceous,} 2-celled or 3-
celled, and 2-3-lobed nearly to the
middle, the lobes slightly divergent,
loculicidal, the valves therefore
2-lobed, persistent: Placenta below

48 322
the free obtuse lobes. Seeds
nubulous, ~~almost~~ not quite a line
long, including the appendage, ^{canaliferous,} ~~glo-~~
the body globose-oval; a thin, hya-
line reticulated pellicle is closely
conformed to the membranaceous-crusta-
ceous, brown, proper seed-coat, is scarcely
looser along the slender shape,
and not at all produced at the
rounded chalazal extremity, but
at the hilar or micropylar extrem-
ity it is, ^{and} extended into a fungous-
cellular ^{and} very obtuse, cylindraceous
appendage of half the length and
diameter of the seed. Albumen
hard-fleshy, adherent to the seed-
coat. Embryo next the hilum, cyl-
indric, not half the length of
the albumen.

Of *Helonias* proper ~~has~~ until now
only a single species has been known,
upon which Linnaeus founded the
genus; and this is a rare ~~or very local~~

Plant, restricted to a few localities
the adjacent part
in New Jersey, Pennsylvania and
Delaware, and Virginia. True
to the law, if we may so call it, that
~~plants of the~~ peculiar Eastern North
American types shall have their
counterparts in Japan. This
second *Helonias* now comes to light
from that region; ^{no doubt} a true congener
of *H. bullata*, but well marked
in ^{specific} character.

There is some reason
to suppose that ~~the~~ allied *Chamae-*
lirium luteum (*Helonias divica* Pursh,
Veratrum luteum Linn.) also has
a Japanese counterpart in *Helonias*
? Japonica, Roem. & Schult.,
the *Melanthium luteum* of Thun-
berg. But this plant, unfortunately,
has not yet been rediscovered.

Veratrum nigrum, Linn.;

Hook. & Arn. Bot. Beech. p. 118; Kunth,
Enum. 4, p. 186; Ledeb. Fl. Ross. 4, p. 208.

On mountain-sides and in vallies,
in shady places, Hakodadi and
north end of Nippon. J. Small.

Exactly the European *V. nigrum*,
flowers "purple", ~~rotate~~, on pedicels
almost as long as the ^{rotate} perianth.

V. viride (*V. Eschscholtzii*, Gray)
is probably also in Japan, having
been detected in the adjacent ~~Okotsk~~
Okotsk region by Middendorf.

Juncaceae.

Juncus effusus, Linn.; Thunb. Fl. Jap. p. 145. J. communis, E. Meyer. Simoda; common in wet grounds.

Luzula pilosa, Willd.; Ledeb. Fl. Ross. 4, p. 214. L. vernalis, Desv. Juncus pilosus, Linn.; Thunb. Fl. Jap. p. 145. Hakodadi.

Luzula campestris, L.; Ledeb. l.c.; E. Meyer, in Linnaea, etc. Juncus campestris, Linn.; Thunb. l.c. Simoda and Hakodadi.

Various forms; one answering to ~~the~~ L. pallescens; others nearly to L. nigricans.

Commelynaceae.

Commelyna polyzama, Roth, Catel. 1, p. 1; Kunth, Enum. 4, p. 37. C. communis, Thunb. Fl. Jap. p. 35. Simoda, in moist and shady places.

Cyperaceae.

Eleocharis pileata (sp. nov.);
caespitosa; rhizomatibus ~~fibrosis vix~~
~~repenti~~ filiformibus vix repentibus;
culmis ~~spicatis~~ vaginis et spica
♀. palustris; glumis ovatis obtusis
rufis margine leviter ^{scarioris};
stilo alte bifido; tuberculo ^{celluloso} suberoso
albo mitri ^{vd pileiformi} obtuso laevi achenium
obovato-lenticulare ~~turgidum~~
obtusangulum ^{pallidum} laeve longitudine ac
~~atque~~ latitudine subaequante; setis
4-6 fragilibus nunc ~~achenia~~ ad
~~aequantibus~~ achenio aequilongis nunc
evanidis. — Hakodadi; in fresh-
water marshes; also (a depauperate
form) in damp soil near the sea-
shore.

This species has the aspect of
the European Eleocharis palustris;
the glumes of which are darker colored
than in the North American

Plant so called. It is well distin-
guished by the achenia, which are
larger and more compressed, and crow-
ned with a ^{cellular} spongy, very
large, ^{or cup-shaped} ~~mitri~~form tubercle which
is ~~nearly as wide~~ little shorter than
the acheneum itself and almost
as wide as ~~the~~ ~~ach~~ its summit,
upon which it is closely sessile by
a concave base. The hypogynous
setae are very delicate and fragile,
somewhat retrose barbellulate, and
in many of the flowers ~~absolutely~~ ap-
parently obsolete. Only a few of
the specimens are sufficiently ad-
vanced to show the fruit. Steudel's
E. mitracarpa, ^{from Persia} is said to have a
squamose, minutely hispid tubercle,
probably of much smaller size.

Scirpus lacustris, Linn.;
Thunb. Fl. Jap. p. 37. *S. ciliatus*,
Steud. Syn. Glum. 2. p. 86. In

Swamps, Hakodadi.

The spikelets are all young;
but the plant is doubtless only
S. lacustris.

Eriophorum gracile, Koch in
Kth. Catal. 2. p. 259; Ledeb. Fl. Ross.
4. p. 255. *E. triquetrum*, Hoffm., Hako-
dadi; in marshes.

Varices, elaborated by Dr. Boott.

CAREX NANA (Boott, sp. nov.): spica simplici androgyna apice mascula oblonga olivaceo-ferruginea
nuda; stigmatibus 3; perigyniis ovatis turgidis inaequaliter triquetris sensim rostellatis (ore inte gro) obscure
2-3-nervatis glabris horizontaliter patentibus resinoso, demum ferrugineo-punctatis deciduis squama ovata
obtusissima mutica ferruginea margine albo-hyalina medio pallida longioribus. —

Hakodadi;
plains among grass, and in marshy ground.

Culm 8 or 10 inches high, capillary,
smooth, obtusely angled, Leaves $\frac{7}{10}$ of a line
wide, flat, or involute, canaliculate, shorter
than the culm, scabrous at the apex, Spike
4 or 5 lines long, 2 or 3 lines wide at the base,
rather loosely flowered. Squamula conformed.
Perigynium $1\frac{6}{10}$ line long, $\frac{9}{10}$ of a line
broad, turgid, Achumenium $\frac{8}{10}$ line long,
half a line wide, oval, acutely triquetrous,
apiculate with the base of the style. —

(The Himalayan
Allied to) *C. Capillacea*, Nutt. III. Car.
p. 44, t. 110; but larger in all its parts;
the culm taller and smooth; the leaves
broader and shorter; spike few-flowered;
scales not at all ciliate; the perigynia
of twice the size, turgid, and fewer-
nerved.

Carex remota, Linn.? Hakodadi;
on shady hillsides in dense tufts. —
Too young for exact determination; but
apparently the Linnean species.

Carex stellulata, Linn. Good.;
var. *spiculis* ^(~~brachyphylla~~ ~~longistylis~~) *perigynis longe rostratis*
majoribus! — Hakodadi; in marshy
ground.

Spikelets 3, about 4 lines long and
broad. Perigynia $2\frac{1}{10}$ lines long, $\frac{7}{10}$ line
wide, ovate-lanceolate, tapering into a
long beak, thick and spongy at the
base, thickly nerved on the anterior
face, on the posterior with the nerves
nearly evanescent beyond the spongy
base.

Carex albata (Pursh, sp. nov.); Spica oblonga vel suboblongata albo-castanea & spiculis apice masculis 8-16 simplicibus contiguis, infima bracteata; stigmatalibus 2; perigyniis oblongo-ovatis in rostrum tenue longum attenuatis (ore integro membranaceo oblique secto) marginibus superne scabrisculis utrinque plurinerviis squama ovata obtusa vel acuta demum castanea margine late albo-hyalina subduplo longioribus, — Affinis C. mutigena Don; differt bracteis abbreviatis, foliis planis gramineis, perigynio majori, ore obliquo integro, squamis margine late hyalinis muticis, C. muricata L. spiculis paucioribus, perigynio acute bifido parce nervato basi styli brevis clavato, achenio majore gaudent, — Hakodadi, on hill sides.

culmus about 8 inches long, triquetrous, scabrous. Leaves a line broad, flat, gramineous, nearly equalling the culmus. Lowest bract shorter than the spike, filiform; the others squamiform, the lower ones cuspidate. Spike 10 to 22 lines long, 5 or 6 lines broad. Scales white, turning chestnut-colored with age, with broad hyaline margins, the costa evanescent below the apex. Perigynium $2\frac{4}{10}$ lines long, $\frac{8}{10}$ line wide, the beak often

curved, the nerves on the anterior face about 18, on the posterior fewer, some of them vanishing above; nific minute, Sphenium 6/10 line long, half a line wide, shining, perigynous, abruptly apiculate with the elongated, setaceous, equal base of the style.

Carex muricata, Lin., Stakodadi,
on the sandy shores of the bay, ~~and~~
~~hillsides.~~

Carex stipata, Muhl. in Willd.,
Spec. 4. p. 233. Stakodadi; on the
banks of ditches.

~~Carex anomala~~

Carex anomala (Boott. in Perry,
Jap. Exped. 2. p. 327); spica oblonga pub-
lida e spiculis 6-9 androgynis basi mas-
culis approximatis viridibus ovalibus,
omnibus longe bracteatis simplicibus, vel
inferioribus basi compositis; bracteis spi-
cam longe superantibus; stig. 3 brevibus,
perigyniis orbiculatis vel ovalibus basi
paullo productis sensim breve rostratis
bidentatis plano-convexiusculis anguste
alatis marginibus e medio sursum
symulatis nervis late viridibus antice
~~nervis~~ ^{linea} centrali albida notatis membra-
naceis squama subrotunda obtusa

38
alba nervo viridi aristata latis
longioribus vel (arista) brevioribus. —
Simoda; on hill sides and in damp
grounds, in tufts.

In habit this resembles *C.*
alba, Boott, Ill. Car. p. 59, t. 153,
~~but is remark~~ from Java; but it
is remarkable for having, along
with three stigmas, an annulate
lenticular achenium, the posterior
angle being suppressed. Perigynium
 $1\frac{1}{2}$ line long, rather more than $\frac{1}{10}$ line
wide. Achenium $1\frac{3}{10}$ line long, $\frac{8}{10}$ line
wide, broadly oval, produced at the
base, ^{an areolus} ~~annulate~~ at the apex, ~~areolae~~
surrounding the thickened base of the
style, compressed, on the posterior
side marked with a slightly elevated
central costa, in place of an angle,
pale straw-colored.

(approximatis vel)

CAREX PICTA (Boott, sp. nov.): spicis 2-3 pedunculatis ferrugineis, terminali mascula gracili erecta, foemineis 1-2 longe setaceo-pedunculatis evaginatibus nutantibus subremotis viridi-ferrugineo pictis; bractea culmo paullo longiori; stigmatibus 2; perigyniis ellipticis utrinque acutis brevissime aut vix rostellatis (ore integro) compressis undique papilloso-asperulis superne ad margines nunc parce dentatis enerviis aut leviter nervatis ferrugineis apice viridibus squama elliptica obtusiuscula longiuscule hispidocuspidata subaequilata viride ferruginea basi pallida nervo viridi paullo longioribus (cuspidate) brevioribus. — A *C. cryptocarpa*, Meyer, differt spicis foemineis 2 ferrugineis nec apice masculis; squamis cuspidatis; perigyniis majoribus; culmo scabro. A *C. macrochata*, Meyer, stigmatibus 2; spicis longe pedunculatis; squamis masculis obtusis nervo vix excurrente, foemineis brevius cuspidatis; perigyniis papillosis margine dentatis; fibris radicalibus lignosis nec villosis. — Hakodadi, in marshes.

Culm a foot high or more, acutely angled, scabrous. Leaves ^{about} 2 lines broad, flat, rather firm & strict, pale green, as long as the culm. Lowest bract rather exceeding the culm; its auricles strong and ferrugineous. Male spike 12 to 14 lines long, a line thick, ferrugineous, furnished at its base with two scale-like bractlets (the rudiments of spikes), the lower one hispid-cuspidate. Squama very obtuse, ferrugineous, and with a slightly exerted green nerve. Female spikes an inch long, 3 or 4 lines wide, half an inch or an inch, rarely 2 inches apart, nodding on capillary ^{scabrous} peduncles of 6 to 13 lines in length. Perigynia $2\frac{3}{10}$ lines long, about a line wide.

Carex incisa (Bott. & Perry,
 Sup. Exped. 2. p. 327); spicis 4-5 cyl-
 indricis gracilibus linearibus contig-
 uis evaginatiss pallidis, terminali
 mascula vel basi mascula sessile,
 reliquis femineis, inferioribus basi
 attenuata ^{intermpt} saepe laxifloris mutantis
 bus; bracteis spicis suis brevioribus; stig.
 2; perigyniis elliptico-oratis rostellatis
 ore integro nervis resinoso-dum-
 fermeo-punctatis squama obcordata
 emarginata pallide fulva brevissi-
 me lateque cuspidata nervo viridi
 longioribus - A. C. heterolepide Bunge
 differt, spicis longe pedunculatis gra-
 cilibus contiguis basi laxifloris, squa-
 mis omnibus emarginatis, perigyniis
 minoribus nec granulatis, bracteis
 brevibus, culmo gracili apice setaceo.
 - Hakodadi, on hill sides (with the
 culms a span to a foot high),
 and on the banks of ditches, with

the culms two feet or more in height.

The squamæ are pellucid-punctate under a lens; the perigynium short-stipitate, $1\frac{1}{10}$ line long, half a line or more in width, glabrum $7/10$ line long, half a line wide, lenticular, obtuse, abruptly apiculate with the equal base of the style, ferruginous.

Carex Gandichandiana, Kunth, Enum. 2. p. ^{Var. 2 squamis, multis} 417, Hakodadi; in marshes.

Carex aperta, Booth, in Hook. Fl. Bor. Am. 2. p. 218, t. 219, Hakodadi; with the last, a solitary specimen.

Carex Japonica, Thunb. Fl. Jap. p. 38; Willd. Spec.; Nahl. Act. Holm.; Schk. Bar. t. W. V. fig. 110. C. chlorostachys, Don. Prodr. Fl. Sep. p. 43, ^{Booth} in Lin. Trans 14. p. 330. C. Doniana, Spring, Syst. 3. p. 825; Desjer,

Symb. p. 26. t. 13; Boott, in Perry, Imp. L.C. —
Simoda, on shaded hills, Habi-dadi;
small, immature specimens. Herb.
var. minor, Cape Ioya, Small,

The young specimens from Habi-dadi
are ~~exactly~~ like Schumacher's figure of
C. japonica, as to ~~leave no doubt~~
to which therefore C. Soniana must
be reduced.

Carex villosa (Boott, in Perry,
L.C.); species 3-4 subapproximatis
erectis pallidis, terminali mascula
cylindrica gracili pedunculata castanea,
feminis oblongis subcrassis olivaceis
aut 2 evaginatis aut 3 infima ex-
serte pedunculata; bracteis culmo
brevioribus vel longioribus; stigmatibus
3; perigyniis ovato-lanceolatis triquetris
sensim in rostrum breve acuminatis
(ore obliquo acute bifido, laciniis ciliato-
serratis) crebre leviter nervatis glabris
pallide olivaceis squama ovata e-
marginata vel acuta late cuspidata
ciliata fulva medio nervata viridi

longioribus; culmo folisque villosis,
— Ad C. Gunnianum, Bott. accedit.
— Hakodadi; on plains in rich alluvial
soil.

Culm a foot or a foot and a half
high, triquetrous, scabrous above, leafy
below, the fructiferous portion $3\frac{1}{2}$ to 5
inches long. Leaves 2 or 3 lines wide,
shorter than the culm, flat, gramineous,
Bracts 1 to 3 lines wide, ~~narrower~~ in the
specimens with only two fertile spikes,
shorter than the culm and narrower,
in the others broader and rather longer
than the culm; sheaths half an inch
in length. Lowest peduncle 3 to 15 lines
long, smooth. Male spike 10 to 13
lines long, nearly a line wide; the scales
obtusely, mucicous, ciliate, and with white
hyaline margins. Female spikes 6 to
12 lines long, 4 or 5 lines wide, an inch
or two apart. Perigynium $2\frac{7}{10}$ to $2\frac{9}{10}$
lines long, $\frac{7}{10}$ or a line wide, empty towards
the apex, glabrous. Achenium $1\frac{3}{10}$ (or

with the persistent base of the style
 $\frac{3}{10}$ line long) $1\frac{1}{10}$ line in length, $\frac{7}{10}$ to $\frac{8}{10}$
line wide; triquetrous-obovate, abruptly
apiculate by the equal base of the
style, pale, punctulate.

Carex dispalata, Boott, in Perry,
l.c. p. 325. Hakodadi; in marshes.

Allied to C. amplifolia, Boott,
M. Car. p. 17, t. 48, of Oregon; differs
in the acute and mucronous, not emar-
ginate scales, and in the oblique base
of the style. From ^{the Himalayan} C. divarica, Boott,
it differs in its solitary male spike,
narrower female spikes which are not
stamiferous at the summit, mucronous
scales, and shorter bracts.

CAREX CONFERTIFLORA (Boott, sp. nov.): spicis 6 alternatim subcontiguis erectis, terminali mascula
cylindrica gracili ferruginea, reliquis femineis fusco-olivaceis concoloribus oblongo-cylindricis obtusis densifloris,
superioribus sessilibus, summa abbreviata apice mascula, infima vaginata brevi-exserte pedunculata; bracteis
inferioribus late foliaceis culmum superantibus; stigmatibus 3; perigyniis triquetris-ovatis ventricosus rostratis
(or ferrugineo membranaceo margine hyalina oblique secto demum bilobo) glabris nervatis confertis mem-
branaceis squama lineari longe attenuato-acuminata ferruginea nervata longioribus triplo latioribus. — Affinis
C. olivacea, Boott, Ill. Car. p. 56, t. 149: differt spicis paucioribus multum brevioribus densifloris obtusis nec
apice masculis; bracteis culmoque multum brevioribus; squamis femineis attenuatis nec longe cuspidatis.
Hakodadi, on hillsides,

ri/

Culm stout, a foot high, smooth,
very acutely angled, leafy at the base;
the fructiferous part 3 to 5 inches long.
Leaves 5 lines wide, equalling the culm,
trinervate. Lowest bract 4 lines wide;
all of them except the uppermost sur-
passing the culm. Lowest peduncle 8
lines long. Male spike 16 lines long,
a line broad, short-peduncled; the scales
linear-lanceolate, mucicous, ferruginous,
with white-hyaline margins. Female
spikes 12 to 14 lines long, 3 or 4 lines wide,
from $\frac{1}{2}$ to 2 inches apart. Perigynium
2 lines long, $\frac{8}{10}$ line wide. Achenium
(scarcely mature) $\frac{1}{10}$ line long, half a line
broad, oval-triquetrous, apiculate by the
persistent oblique base of the style, pale;
the ~~face~~ sides as if nerved by lines or
elevated rugae of the same line.

Carex transversa (Boott in
Perry, l.c. p. 324); spicis 3-4 approx-
 imatis erectis, terminali mascula fer-
 ruginea cylindrica pedunculata vel
 abbreviata sessili spicas feminas su-
 periores vix superante, reliquis foemin-
 eis oblongis fusco-olivaceis, superioribus
 2 mascula arcte contiguas, infima
 subremota ^(rare remote) sessile pedunculata; brac-
 teis culmum longe superantibus;
 stigmatibus 3; perigyniis ovali triquetris
 in rostrum longum tenue sensim
 acuminatis (rostro basi demum con-
 stricto, ore ferrugineo membranaceo
 integro alte obliquo demum hinc
 fisso) fusco olivaceis crebre nervatis
 glabris divergentibus squama ovata
 acuminata acuta longe setaceo-aris-
 tata alba nervo viridi tenui latioribus
 longioribus (aristam) subaequantibus,
 — Affinis C. tumida, Boott, Ill,
Can. p. 66. t. 181: differt spicis oblongis

latioribus approximatis; perigyniis majoribus divergentibus, rostro largiori, ore alte oblique secto; basi styli incrassata; foliis angustioribus. — Shimoda; in wet grounds and along rivulets, &c.

Culm 1 to 2½ feet high, slender, obtusely triquetrous, smooth, leafy below, the fructiferous portion from one to ~~five or six~~ ^{five} inches in length. Leaves a line and a half wide, bright green, exceeding the culm. Bracts sheathing much surpassing the culm. Lowest sheath from 3 to 12 lines long. Male spike 12 to 15 lines long, a line broad, or sometimes of only half the size; the scales long cuspidate. Female spikes 8 to 15 lines long, 4 lines broad; the lowest often 2 or 3 inches ^{below} ~~from~~ the rest; scales all aristate. Perigynium 2½ to 3 lines long (its beak sometimes a line and a half long, and often constricted at the base) 8/10 line wide.

Achenium $1\frac{3}{10}$ lines long, $\frac{8}{100}$ line wide broadly oval-triquetrous, the angles acute, the sides slightly concave, pale, punctulate; the persistent equal base of the style bulbous-thickened.

CAREX PAPULOSA (Boott, sp. nov.): spicis 3 oblongis remotis, terminali mascula lanceolata gracili longe pedunculata erecta, reliquis foemineis olivaceis exserte pedunculatis nutantibus distantibus; bracteis culmo brevioribus; stigmatibus 3; perigyniis triquetro-lanceolatis in rostrum sensim longe acuminatis (ore obliquo integro membranaceo) superne vacuis glabris crebre nervatis olivaceis squama ovata obtusa valide cuspidata ferruginea medio viridi-nervata sub lente papulosa angustioribus longioribus. — A *C. villosa*, Boott, differt, spicis nutantibus remotis; squamis medio papillosis nec emarginatis; perigyniis ore integro; culmo folisque glabris. A *C. Jackiana*, Boott, Ill. Car. p. 9, t. 25 differt, spicis foemineis 2 remotis longe pedunculatis nutantibus simplicibus; bracteis brevioribus; squamis masculis muticis, foemineis firmis latioribus. — Hakodadi, in

marshy grounds.

Culm 2 feet high, weak, smooth, acutely angled, leafy at the base, the fructiferous portion 8 inches long. Leaves flat, soft, 2 or 3 lines wide, much shorter than the culm. Bracts sheathing, longer than the spikes, the lowest $1\frac{1}{2}$ lines wide, its sheath $1\frac{1}{2}$ inches long. Peduncles $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, exsert, slender, roughened under a lens by minute papuli. Male spike an

inch long, $1\frac{1}{4}$ lines wide, lanceolate acute, raised 2 or 3 inches above the above the uppermost female spike; its scales ferruginous, obtuse, mucous, or rarely with the midnerve somewhat excurrent; the lowest long. cuspidate. Female spikes 9 lines long, 3 lines thick, rather loose, nodding, situated 5 or 6 inches apart. Perigynium $3\frac{1}{10}$ to $3\frac{4}{10}$ lines long, $\frac{8}{10}$ line broad. Achenium $1\frac{1}{2}$ lines long, $\frac{8}{10}$ line broad, oval, acutely triquetrous, apiculate with the persistent base of the style.

a C. PARCIFLORA (Boott, sp. nov.): spicis oblongis parvifloris laxis pallidis, terminali mascula abbreviata oblique gracillima breve pedunculata, reliquis foemineis erectis laxifloris, suprema masculae arcte contigua, inferioribus remotis exserte pedunculatis; bracteis superioribus culmo paullo longioribus; stigmatibus 3; perigyniis ovato-triquetris sensim in rostrum breve acuminatis (ore integro obliquo pallido) olivaceis glabris oblique divergentibus nervatis squama ovata alba nervo tenui viridi excurrente latioribus longioribus. — A C. papulosa differt spica mascula abbreviata obliqua, foemineis erectis laxifloris; perigyniis minoribus; squamis albis tenuiter cuspidatis; culmo pedunculisque ancipitibus. A C. Jackiana, spicis laxifloris remotis, mascula obliqua; perigyniis brevioribus, nervis paucioribus, ore integro; culmo debili. Ad. C. laxifloram, Lam., proprius accedit: differt inflorescentia breviori; spica mascula obliqua, foemineis brevioribus; perigyniis basi minus productis olivaceis, ore integro, nervis paucioribus; squamis acutis; rhachi recta; foliis tricostratis. ~~Ad. debili~~

— Near Hakodadi; on the sides of mountains along rivulets.

Stem $1\frac{1}{2}$ feet high, weak or inclined, smooth, below ancipital; the procliferous

portion 8 inches in length. Leaves 3 or 4 lines wide, flaccid, much shorter than the culm, those of ~~the~~ sterile tufts equalling the culm, tricostate. Lowest bract $2\frac{1}{2}$ lines wide, more than twice the length of its spike; its sheath 15 lines long. Lowest peduncle $2\frac{1}{2}$ inches long, arisipital, somewhat scabrous. Male spike 4 lines long, $\frac{1}{2}$ line wide, oblique; its scales pale fulvous with a green centre, obtuse and muticous. Female spikes 5 to 7 lines long, 3 lines thick, situated from 2 to 6 inches apart, few-flowered, the lowest with ~~the scales~~ sparsely or remotely flowered towards the base; scales membranaceous, white, the lower ones rather long cuspidate. Perigynium 2 lines long, $7/10$ line wide, slightly nerved, membranaceous, closely applied to the acheneum; the latter $1\frac{1}{10}$ lines long, $7/10$ line broad, ovate, acutely trigonous, apiculate with the oblique equal base of the style, style curved.

Memo, 311

Carex rigens, Boott, sp. nov. I find was collected not at Hakodadi, but only upon Ousima, one of the islands here ranked with the Soohoo Islands. And I suppose it is only a variety of Carex bracteosa Boott. I doubt is enquired of about it.

"CAREX RIGENS (Boott, sp. nov.): spicis 3-4 oblongo-cylindraceis approximatis erectis, terminali mascula subsessili sæpe obliqua, reliquis fœmineis fusco-olivaceis, superioribus masculæ contiguis, infima subperforata exserte pedunculata laxiflora; bracteis foliaceis culmo longioribus; stigmatibus 3; perigyniis ovatis ventricosus obtuse triquetris rostratis glabris vel rostro parve dentato (ore membranaeoeo albido bifido, laciniis scabris) crebre validen ervatis fusco-olivaceis divergentibus squama ovata acuta vel truncata longe valideque cuspidata albida nervo viridi latioribus longioribus vel cuspidate brevioribus. — Affinis C. granulati, Muhl.; differt spicis fusco-olivaceis laxis; perigyniis rostro bifido longiori. Hakodadi; Ousima.

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CAREX MICANS (Boott, sp. nov.): spicis 3-4 cylindricis stricte erectis, terminali mascula sessili gracilima castanea vix apicem foeminae superioris attingente, reliquis foemineis teretibus fusco-olivaceis, superioribus 1-2 masculis arete contiguis, infima remota longe exserte pedunculata, bracteis vaginatis culmum longe superantibus; stigmatibus 3; perigyniis ovalibus plano-triquetris rostellatis (ore integro ferrugineo) late demum fusco-viridibus papillis micantibus undique asperatis costato-nervatis squama oblonga obtusa rarius acuta mutica vel nervo excurrente alba medio late viridi demum ferruginea latioribus longioribusque. — *Simoda*;

along rivulets upon hillsides.

Culm a foot and a half high, slender, triquetrous, obliquely angled, smooth, the fructiferous summit 5/8 inches long. Leaves 2 lines wide, shorter than the culm, green. Bracts sheathing, the lowest 2 lines wide, ~~twice~~ ^{by} half its length surpassing the culm; its sheath 8 to 12 lines long; ~~Peduncles~~ its peduncle ~~2 1/2~~ from 2 to 3 inches long, papillose-roughish. Male spike 10 to 13 lines in length, ~~scarcely~~ scarcely a line in thickness, sessile, naked or with a short setaceous bract, its scales obtuse and pointless, chestnut-colored. Female spikes 9 to 16 lines long, 2 lines in thickness, exserted, peduncled, or the uppermost sessile; the

lowest 3 or 4 inches distant. Perigynium
mm $1\frac{2}{10}$ or a little more in length; about
 $\frac{5}{10}$ of a line broad. Acheneum $\frac{7}{10}$ or $\frac{8}{10}$
of a line long, half a line broad, oval, acutely
triquetrous, pale, punctulate, short-
stipitate, the sides somewhat concave,
the summit apiculate with the oblique
persistent base of the style.

Carex vesicaria, Linn.; ~~testa~~ (squamis
cuspidatis linearibus vel subinde
truncatis seu emarginatis. — Hakodadi

Carex pumila, Thunb. Fl.
Jap. p. 39; Boott. in Perry, l. c. C.
littorea, Labill. Hakodadi and Si-
moda, on ~~the~~ sandy shores.

Carex Wakuensis, C. K.
Meyer, Gyps. Nov. p. 24, t. 10. Simoda;
on rocky ledges by the sea-side.
More abundantly gathered in the Iwo
Choo Islands.

C. bispicata, Hook. & Arn. Bot. Beech.
p. 118, t. 28.

Carex longe rostrata, C. A. Meyer,
l.c. p. 26, t. 11. *C. Bartschatense*,
Kunth, Enum. 2. p. 477. Hakodadi;
sparingly gathered on shaded hillsides,
in small tufts.

Carex rostrata, Michx. Gl. Bot.-
Am. 2. p. 173, non Schkuhr. *C. xan-
thophylla* var. *minor*, Dervey. Hako-
dadi, in marshy ground. Exactly the
plant of ~~the~~ Hudson's Bay and the
mountains of New England.

Carex procox, Lacq. Fl. Austr.
t. 446; Brott in Perry, l.c. p. 327. Ha-
kodadi; on the sandy shores of the bay.

Carex polyrhiza, Wallrothe;
Koch, Syn. p. 877. *C. procox*, var.
~~Lacq. l.c. glandin~~, *C. umbrosa*,
Stopp. Forma, spicis magis re-
motis longe exserte pedunculatis, vaginis

aphyllis elongatis scabrescentis, infima
subulato-apiculata. — On the sum=
mit of mountains northeast of Hako=
dadi; in dense tufts; specimens in
flower only.

Carex filiformis, Linn. Hako=
dadi; in marshes.

Carex pilulifera, Linn., var.
deflexa, Drejer, Revis. Crit. var. p. 54.
~~Hakodadi~~. Summit of mountains
north east of Hakodadi; in small tufts
on rocky ledges.

This plant has the habit, peri=
gynium, and bracts of C. Eumousii,
the purple color of C. Noveboracensis,
and the depressed base of the style of
C. pilulifera.

~~Carex parviflora, Britt. in Perry,
l.c. p. 324. Simoda, on steep banks.~~

Carex brenckhuisi (K. Br. Prodr. p. 242 (1810), Benth in Hook. & A. Rees, t. 63, & Fl. Tasman. p. 101); spicis 3-4 abbreviatis oblongisve albo-viridibus demum pallide fulvis, terminali mascula, reliquis foemineis arcte contiguis sessilibus evaginatis (vel alternatim approximatis pedunculatis, in fine subinde brevivaginata nunc radicali laxiflora); stigmatibus 3; perigyniis ovalibus obtuse trigonatis utrinque acutis conico-rostratis viridibus ore albo emarginato nervatis puberulis squama acuta vel truncata vel emarginata plus minus cuspidata brevibus vel aequantibus. — C. Koyukana, Ait. in Magt., Botrib. p. 127 (1834); Benth, Ill. Cur. p. b. t. 19. — C. ~~Lange~~ ~~driffii~~ C. leucochlora, Brong. in Mem. Acad. Petrob. Enum. Pl. Chin. Prodr. p. 68 (1835); Benth in ^{Desing. Fl.} ~~Driffii~~ C. Lange ~~driffii~~, Benth, in Lin. Trans. 20, p. 144. (1846). — C. puberula, Benth, in Mem. Mus. Acad. b. p. 419, adn. (var. minor, spicis perigyniisque minoribus, foliis ^{ioribus} angustis). (Hab. ~~Nor.~~ in N. Zealand, Tasmania, Australia, Himalaya, China, Japan, & var. minor, Loo Choo Islands.) Simoda and Hako-

857

dark, on hill sides and steep banks.

Culm varying from 2 inches to 2 feet in height. Leaves from half a line to a line wide, longer or shorter than the culm, plane and grassy, or conduplicate and firmer. Lower bracts longer or rarely shorter than the culm, the lowest sometimes with a sheath of a line or two in length. Spikes from 2 to 8 lines long, all sessile or pedunculate. Scales white, at length fulvous, with a hooped crop; those of the male spike often obtuse and mucous. Perigynium $1\frac{1}{10}$ to $1\frac{1}{2}$ lines long, $\frac{5}{10}$ or $\frac{7}{10}$ line wide, the beak ~~short~~ ^{often} short. Acheneum conformed to the perigynium; a pale annulus encircling the bulbous base of the style. — The Chinese Japanese *C. leucochlora* and the Himalayan *C. Nepalensis*, it is now evident, must be reduced to *C. breviculmis* of Australia and New Zealand; ~~which~~ and the latter name must be retained on account of its priority, although inappropriate enough for a plant with culms sometimes two feet high. In the

Australian plant the leaves are often folded, firm, and longer than the culm, which is only two to four inches high, and the perigynia in specimens from the mountains are more strongly nerved. In the Himalayan plant the culm is from 8 to 10 inches long, and the leaves generally plane. In the Japanese specimens from Simoda the culm is often as much as two feet in height, the inflorescence $2\frac{1}{2}$ inches long, the male scales thick and mucicous, the lower bract not surpassing the male spike, the leaves plane, and the beak of the perigynium short. Other Japanese specimens resemble those from the ~~Atter~~ Himalayas. H., and have plane and grassy leaves. In the var. minor the spikes are short, compact, and exaginate, the scales tipped with a short cusp, and the perigynium $\frac{9}{10}$ line long, $\frac{4}{10}$ line wide, the leaves half a line wide. The scales vary in specimens from all the localities, and even one on and the same specimen occasionally.

Carex pisiformis, Boott, in Perry,
l.c. Simoda; in tufts on hillsides.

Carex lanceolata (Boott, l.c. p.
 326); spica oblonga purpurea e spiculis
 2-4 paucis laxifloris approximatis erectis,
 terminali mascula abbreviata peduncu-
 lata vel sessili spicula foeminea su-
 perioris apicem vix attingente, his in-
 sertis vel exsertis pedunculatis; vaginis apiculatis
 cuspidatis purpureis; stig. 3; perigyniis
 late stipitatis obovatis obtuse trigonatis
 abrupte oblique rostellatis (ore integro
 oblique secto) pubescentibus crebre valide
 nervatis pallidis squama late lan-
 ceolata acuta aristata purpurea
 margine albo-hyalina angustioribus
 brevioribus. — A. C. lata, Boott, Ill.
Car. p. 69, t. 188 differt spicis erectis,
 nec longe pedunculatis, perigyniis
 valide nervatis. — Hillsides, among
 bushes, Hakodadi.

360

Cespitose. Culms many, weak, 3 to 9 inches long, setaceous, triquetrous, very scabrous, ~~leafy~~ at the base leafy and enclosed by purple sheaths; the fructiferous summit varying from 8 lines to 2½ inches in length. Leaves flat half a line or a line wide, short; but ^{some of} those of sterile tufts ^{much} ~~mostly~~ exceeding the culm. Sheaths 3 to 5 lines long, their tips white. Hyaline and cuspidate. Lowest peduncle 4 to 7 lines long, very scabrous. Male spike 2 to 4 lines long, ½ to ¾ line wide. Female spikes 3 to 6 lines long, 2 lines thick; the flowers 3 to 5 or sometimes 9, alternate, the rachis flexuous. Perigynium 1¾ or a little more in length, about half a line wide. Acheneum conformed to the perigynium, a line long, ½ a line wide, oblong-triangular, produced at the base, brownish with paler angles, punctulate; the thickened base of the style depressed-curved.

307

Carex conica, Boott, in Perry,
L.C. p. 325. Hakodadi.

A few specimens were gathered,
mixed with the preceding species. They
are too young, but they apparently
belong to *C. conica*, of which
C. excisa is probably only a form.

Geary eximia, Pratt, in Berry,
l.c. *Stekel*; on a tree species
near mixed with those of *G. lanceo-*
lata.

Geary eximia, Pratt, in Berry,
l.c. *Stekel*, p. 127; Pratt, in Berry,
l.c. *Stekel* and *Stekel*; in *Stekel*.

Japan MS,

Quercus acutissima ~~Bartram~~
in Ann. Pwent, Linn. Soc. 6, p. 33.

which I am said to have called
Q. serrata, Thunb. - A,

362

Gramineae : Report Col.

William Munro, C. B.

EHRHARTA CAUDATA (Munro, sp. nov.): racemo simpliciter subaeudato; pedicellis hispidis; floribus neutris inaequilongis subulatis 5-7-nerviis, glumis inaequalibus acutissimis trinerviis fere duplo longioribus, hermaphrodito palea inferiori longe aristata; staminibus 3. Hakodadi, on the sides of mountains near rivulets.

quam

A very distinct species, in some respects approaching *E. avenacea*, Willd., of Isle Bourbon. Stems stoloniferous, a foot and a half high, with three joints. Leaves 6 to 12 inches long, narrowly linear, scarcely 3 lines broad, almost smooth. Sheaths smooth or slightly hairy; upper ligules almost acute; the lower obtuse, slightly tinged with black. Raceme 6 inches long, slender, slightly bent to one side. Pedicels about a line long, almost deflexed. Lowest neutral flower $4\frac{1}{2}$ lines, the upper $6\frac{1}{2}$ lines in length, smooth, except on the keels. Lower palea of the perfect flower about an inch long, inclusive of its remarkable awn-like termination, inconspicuously fringed; the upper palea fringed on the two nerves, which are very close together. Styles 2, distinct to the very base. — This is perhaps Thunberg's ~~*Alopecurus caudatus*~~

Alopecurus

caudatus,

Beckmannia cruciformis, Host,
Gram. Austr. 3. t. 6. *Panicum Syzigachne*,
Steud. in Flora 1846. p. 19. Simoda; in
fields and waste places.

A broad-leaved form; the upper
flowers often wanting. Palisot de Beau-
vois figures this genus as having three
flowers in the spikelet; and I have no
doubt that this is the normal form.

Phalaris arundinacea, Linn.,
Spec. 1. p. 80. P. Americana, Torr. Fl.,
1. p. 100. non Ell. P. Japonica, Steud.
Syn. Gram. p. 11. Digraphis arundi-
nacea, Trin. Simoda; in wet grounds.

Distributed all round ^{cooler part of} the northern
 hemisphere, and at the Cape of Good
 Hope.

Hierochloa borealis, Roem. Schult.,
Syst. 2. p. 512. Itakodadi; on the sides of
 mountains.

Some of the specimens, with very long
 radical leaves, are in the condition called
H. ~~repens~~ repens by some European
 botanists.

Milium effusum, Linn. Spec. 1. p.
90. Itakodadi; woods and shaded hills.

Sporobolus elongatus, R. Br.
Prodr. p. 170; P. de Beauv. Agrost. p. 26.
Vilfa elongata, P. de Beauv. l. c. p. 16;
Trin. Gram. Microfl. p. 154. Agrostis

elongata, Retz., Am. Pl. Sp., p. 211; Roem.

Schult., Syst., 2. p. 368, Kagosima
Bay, Kim Sin; in tufts on hillsides.

A form with the branches of
the panicle rather shorter than usual.
I have no doubt, after examining
numerous specimens, that all the
following ^{names} are synonyms of *S. elongatus*.
(The glumes vary in the same panicle in
being erose and acute, and also, although
not much, in relative length. The lower
ligules are short and callous, as described
in *Vilfa cuspidata*, P. de B.; the mid-
dle ones are a mere narrow indistinct
line, as described in *V. tenacissima*, Jacq.,
and the upper ones are short, but strongly
ciliated, as described in *N. erosa*, Trin., and *V.*
elongata. I have, however, always observed
that the second vagina from the top of the
plant is always more or less distinctly
ciliated towards the top.) *Sporobolus In-*
dicus, R. Br. = *Agrostis Indica*, Lin. Mut.!
S. tenacissimus, P. de B. = *Agrostis tenacissima*,
Jacq., & Hork., Fl. Bor., p. 239, but not of

36
Lin. f.! which is a much smaller
plant, ~~with~~ of very different aspect, and
nearly allied to S. orientalis, Kunth. S.
Capensis, Kunth = V. Capensis, P. de B. S.
pyramidalis, P. de B. when the branches of
the panicle are very close. When the panicle
becomes expanded, and the branches elonga-
ted at the base, it is the state usually called
S. diandra, P. de B. = Agrostis diandra,
Klein! Retz! Rexb.! & Willd. in Herb.
Rothl.! Vilfa erosa, Trin.; but V.
diandra Trin. is undoubtedly the Spor-
obolus Coromandelianus and S. commutatus
of Kunth.

There seems to be a
propensity to error in describing this
plant. P. de Beauvois, at p. 16 describes
it as Vilfa elongata, and at p. 25 as Spor-
obolus elongatus; on p. 26 he erroneously
characterizes the lower palea as armed,
which is never the case in Sporobolus.
Moreover in Plate 6 of the same work,
when the plant is figured, no arm is de-
picted, and in the prefatory analytical table

266

it is placed among plants with ~~un-~~
anther palea. I have seen *A. elonga-*
tus from St. Helena, Cape Good Hope, Abyssinia,
Acra, Mauritius, Ceylon, East Indies, where it is very common, China,
Loo Choo Islands, Japan, Chili, Rio Janeiro & Pernambuco, St. Panama, Jamaica,
Mexico, Texas, Columbia River, New Holland,
New Zealand. [~~And we may add~~ It
also occurs on the coast of Massachusetts,
of Lake Erie, &c. and along nearly
the whole course of the Mississippi. A. G.]

Agrotis (Trichopius) scabra, Vill.
Spec. 1. p. 370; Gray, Man. Brit. ed. 2. A.
~~serena~~

Agrotis (Trichopius) serena
mans, Trichopius in Gray, Man. ed. 1. p.
577, & ed. 2. p. 543

Lyrtotis (*Trichostema*) ~~*Bormucopia*~~ ^{*Bormucopia*}
Fraser, Monogr. Cunn. cc. 1789.
(*Bormucopia perennans*, Walt. Fl.
Bar. p. 74). *A. scabra*, Willd., non R. Br.
A. perennans, Tuckerm. ^{in Hill, Journ. Gray,}
Man. Bot. ed. 1. p. 577, & ed. 2. p. 543.
A. campylocha, Tuckerm. in Hill. Journ. A.
laxiflora, Richards. *A. oreophila* ~~and~~
& *A. Michauxii*, Trin. *A. tenuiflora*,
Steud. Syn. Gram. p. 160. *Simoda*
and *Hakodadi*.

To this belong many other syn-
onyms, most of them detailed in Gray's
Manual. At "Simoda, on hillsides,"
it was gathered with plane leaves, and
with the branches of the panicle flowering
sometimes from very near their base.
On "steep banks and in fields," with
the leaves all very narrow, scarcely
half a line wide, sometimes less than an
inch long, and the whole plant not a
foot high, - apparently the form describ-
ed as *A. oreophila*, Trin. The radical
leaves in this variety, although always
narrow, are sometimes several inches
in length. From "Hakodadi, on hill-
sides in dense tufts," is a still smaller

variety, about six inches in height, but with leaves of the usual width, the upper vagina embracing the lower part of the panicle and the leaf surpassing it. In some of the specimens the plant is evidently stoloniferous. — ~~I have no doubt that these are all identical.~~ The venation of the leaves is remarkable, and their sharp serratures, however small, are always ~~in~~ apparent, as also are the rough points on the branches of the panicle. The callus is sometimes bearded, and as often glabrous. *A. Nookkaensis*, Trin., in Act. Petrop., is most likely the same. Trinicus cites *Trichodium album*, Presl for both this and his *A. Michauxii*. A very beautiful variety abounds near Quebec, with extremely narrow leaves, and very long and delicate branches, which are strongly refracted so as to be nearly appressed to the main rachis below. — I have no doubt that all these forms are identical. The species is distributed throughout North America, from the Gulf of Mexico to Bear Lake, ^{and} Alaska, and in Kamtschatka,

49
Siberia, and the Eastern Himalayas.

Trisetum flavescens, P. de Beauv.
Agr. 7, 18, var. T. Ruprechtii, Griseb.
in Ledeb. Fl. Ross. 4, p. 418. T. Sibiricum,
Ruprecht, Fl. Amurj. no. 329.
T. cernuum, Gray in Perry, l.c. p. 328,
non Trin. Bromus bifidus, Thunb.
Fl. Jap. p. 53. B. aveniformis, Steud.
Syn. Gram. p. 326. Simoda, on
shaded hills; with a more advanced
state, gathered at the same date,
with the branches of the panicle
much elongated, which is very like
T. aureum, Nes in Stark. Royle.

Glumes very unequal, the larger
one distinctly three-nerved; both palea
fringed with hairs, the lower one very
scabrous, the upper one with some
unusually long hairs on the margin.
But in other respects the plant agrees
very well with ordinary states of
T. flavescens. T. cernuum, Trin. of
North West America, is very well dis-
tinguished by having its ovary bearded
at the tip. T. flavescens extends through
Europe to Spain (as T. velutina, Boiss.) Sicily, and

Physinia (*P. lachnantha*, Hooker, *P. sibirica*, E. Himalayas, Japan, Australia, and New Zealand, &c.)

Poa pratensis, Linn., var. *angustifolia*, Hakodadi, in rich alluvial soil, and on the sandy shores of the bay.

A similar ~~state is~~ form is very common in the United States, and in Oregon. — This is the plant generally known as *P. pratensis*, Linn.; but the ~~specimen~~ ^{plant} or name in the Linnean herbarium is *P. compressa*, with geminate branches to the panicle, flowering to the base.

Poa nemoralis, Linn., var. *folio supremo vagina multo brevior*, Hakodadi, on hill sides. Distributed nearly throughout the Northern Hemisphere.

Poa serotina, Ehrh.; Gray, *Man. Bot.* ed. 2, p. 562. *P. nemoralis*, Turck, *P. crocata*, Michx. *P. familiaris*, Steud., l.c. p. 426. Hakodadi; on hillsides among bushes, and rich alluvial plains. This seems to be very variable, and to assume all the forms that *P. nemoralis* does; from which it is well distinguished only by ~~the~~ its long (sometimes very long) ligules. Among

The Japanese specimens there is a
 depauperate state ^{and} a broad-leaved
 form; the remainder have ~~the~~ ^a narrow-
 panicle like that of the ^{common} North Amer-
 ican form, ~~of P.~~ the *P. crocata*, Michx.

Poa sphaerolodes, Trin., in *Bunge*
Enum. Pl. Chin. Bor.; Act. Petrop. *Poa*
strictula, Steud. *Syn. Gram.* p. 426, (as
 form *a. erecta, brevifolia*). *P. diantha*,
 Steud. l.c. p. 256 (forma *vulgaris, (diffusa)*
spiculis bifloris). Simoda; on shady
 hill sides.

The culms, sheaths of the leaves, and
 short branches of the panicle are remark-
 ably scabrous at times. The plant con-
 siderably resembles some states of *P. sentina*
 and also *P. trivialis*, *Lin.*, to which I
 at first referred it. However, I believe it
 is a good species, although I am unable
 to distinguish *P. linearis*, *Trin.* from it.
 Steudel is probably right in referring
 to it ~~the~~ *Po* *Festuca misera*,
Thunb. Fl. Jap. p. 52.

Poa acroleuca, Steud., Syn. Gram. p. 256; Gray in Perry, l.c. *P. psilocaulis*, Steud. l.c., forma *angustifolia*. *P. Nepalensis*, Wall. Cat. no. 3791! Simoda and Hakodadi, on hillsides.

This certainly approaches *P. annua*, but I believe it to be quite distinct. The leaves are very (sometimes 9 inches) long, and at the base fringed with apparently glandular hairs; these extend some distance down the sheath, which are occasionally almost hairy. The leaves vary in breadth from $2\frac{1}{2}$ lines to a single line. The latter I suppose to be Steudel's *P. psilocaulis*. The ligule is shorter and the caryopsis smaller than in *P. annua*. The branches of the panicle are always scabrous, very slender, and often more than two together. The upper palea is unusually minute. The species occurs in the Himalayas, Japan, and the Soobhor Islands. It may possibly be *Poa hirta*. Thunb. Fl. Jap. p. 49.

Glyceria Caspia, Trin. in Act. Petrop. 1838, suppl. p. 57; Griseb. in Ledeb. Fl.

Ross. 4, p. 391. *G. ischyrocnura*, Steud.
Syn. Gram. p. 427. *Poa rivularis*, Jacq.
nuss. Simoda and Hakodadi; in
water and wet places.

This is certainly very close to *G.*
fluitans; but the whole appearance,
the few-flowered spikelets, and the short
ligules may keep it distinct. Dr.
Hooker collected the same form in the
eastern Himalayas, alt. 8000 and 11500
feet.

Melica nutans, Linn. Spec. p.
98. Hakodadi, on hillsides, in
tufts.

Festuca rubra, Linn. Spec. p. 109.
Hakodadi, on hillsides and on sandy
ridges near the sea.

Festuca pauciflora, Thunb.
Fl. Jap. p. 52; Gray in Perry, l.c. p.
328. *F. occidentalis*, Hook. Fl. Bor. Am.
2, p. 249. *F. parvigluma*, Steud. *Syn.*
Gram. p. 305. *F. remotiflora*, Steud. l.c.
p. 315, forma *multiflora*. Hakodadi
~~and Simoda, on hillsides and~~

on the summit of mountains, ^{or} and
 Simoda, on hills, in dense tufts.

The leaves and sheaths are not as
 hairy, as Thunberg describes them,
 but in some specimens the lower sheaths
 are decidedly pilose. I have no doubt
 of the correctness of the above-named
 synonyms. The species is divided between
 Japan and the western coast of North
 America.

Bromus Japonicus, Thunb. Fl.
 Jap. p. 52. B. villiferns, Steud. Syn.
 Gram. p. 326. B. patulus, Mert. &
 Koch, Fl. Germ. B. multiflorus, Host,
B. vestitus, Schrad. B. pectinatus, Thunb.,
B. arenarius, Labill. Hakodadi, on
 sandy ridges near the sea, Simoda,
 in fields and waste places.

I do not believe that any of
 the species enumerated above, differs in
 any material respect, except in the pubes-
 cence. ~~The species I have the plant from~~
~~occurs in Europe, Cape of Good Hope (as B.~~
vestitus) Bulgaria, Affghanistan,
Scinde, Cashmere (as B. annuus, Jacq.)
Kumavar, Tibet, New Holland, New Zealand
 and (as B. arenarius, Labill.), Japan.

Triticum (Agropyrum) caninum, Schub.
Elymus caninus, Lin. Herb.! Bromus
conformis, Steud. Syn. Gram. p. 323; Gray,
in Perry, l.c. (forma valde luxurians).

Triticum (Agropyrum) semicostatum, Nees, in Steud. l.c. p. 346; var.
hirtellus, B. racemiferus, Steud. l.c. p.
 323, Simoda and Hakodadi; on
 hillsides.

Although closely approaching the
 preceding species, this is, I believe, well
 distinguished by the 5-7-nerved and some-
 what obtuse glumes. The lateral nerves
 of the lower palea are produced into
 short teeth, and the sides are some-
 times very conspicuously pectinately
 fringed.

Zoysia pungens, Willd. in Nov.
Act. Nat. Cur. Berol. 3. p. 440. 12.
Japnica, Steud. Syn. Gram. p. 414.
Agrostis matrella, Lin.! Milium
maritimum, Koenig! Simoda;
 also Hakodadi, on the sandy shores
 of the bay.

371
Filias

Copy still in the hands of
the author. D. C. Eaton.

Lycopodiaceae.

Lycopodium serratum, Thunb. Fl.
Jap. p. 341, tab. 38. Simoda, on
hill sides.

Lycopodium lucidulum, Michx.
Fl. 2. p. 284. Summit of mountains
northeast of Wakodadi.

An interesting discovery of a
species hitherto supposed to be peculiar
to Eastern North America, where it
it is unknown west of the Saskatch-
ewan. Our L. dendroideum, however,
has maintained a more continuous
range, extending as it does ^(quite) across the
American continent, and into Kamts-
chatka and Eastern Siberia.

Lycopodium Selago, Linn. A
slender sterile form, from the summit of
mountains, along with the preceding.

Selaginella involvens, Spring.

Manogr. Lycsp. p.
da, on mountain-sides.

limo =

Equisetaceae.

Equisetum limosum, Lin.
Itakodadi; in marshy ground.